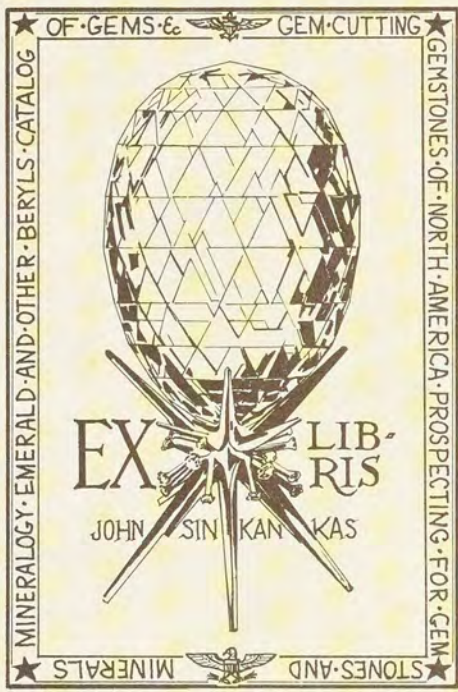
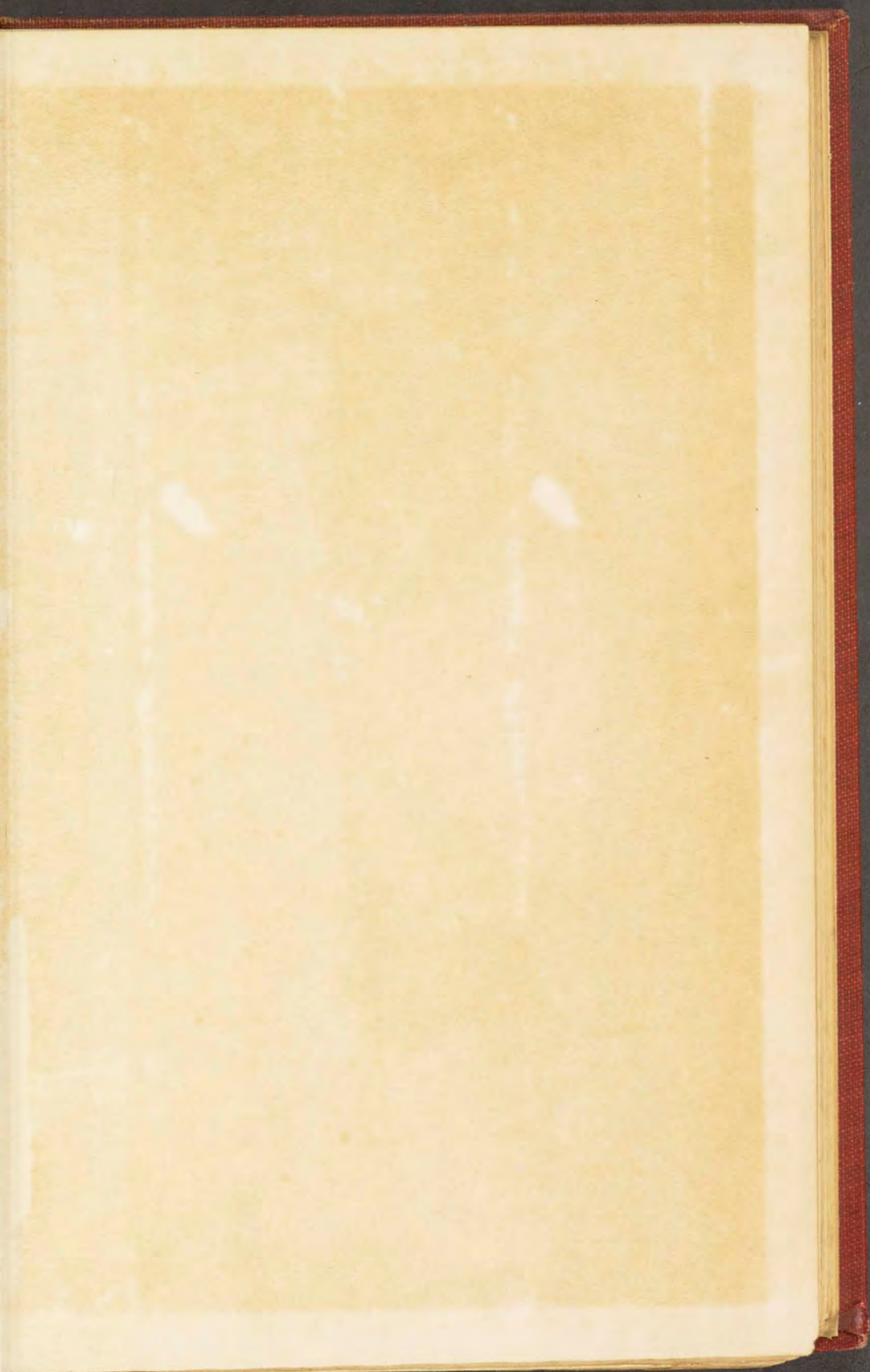


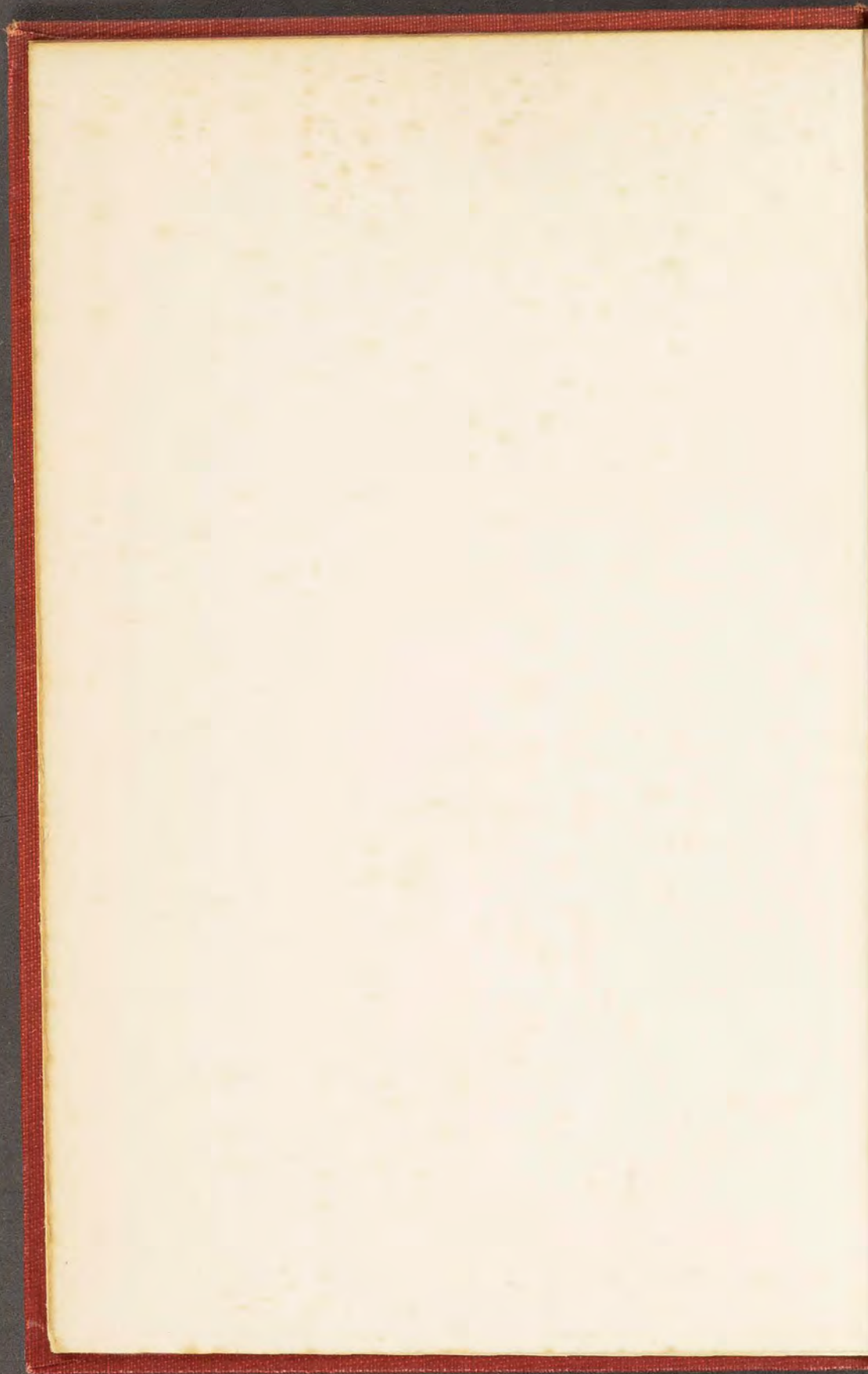
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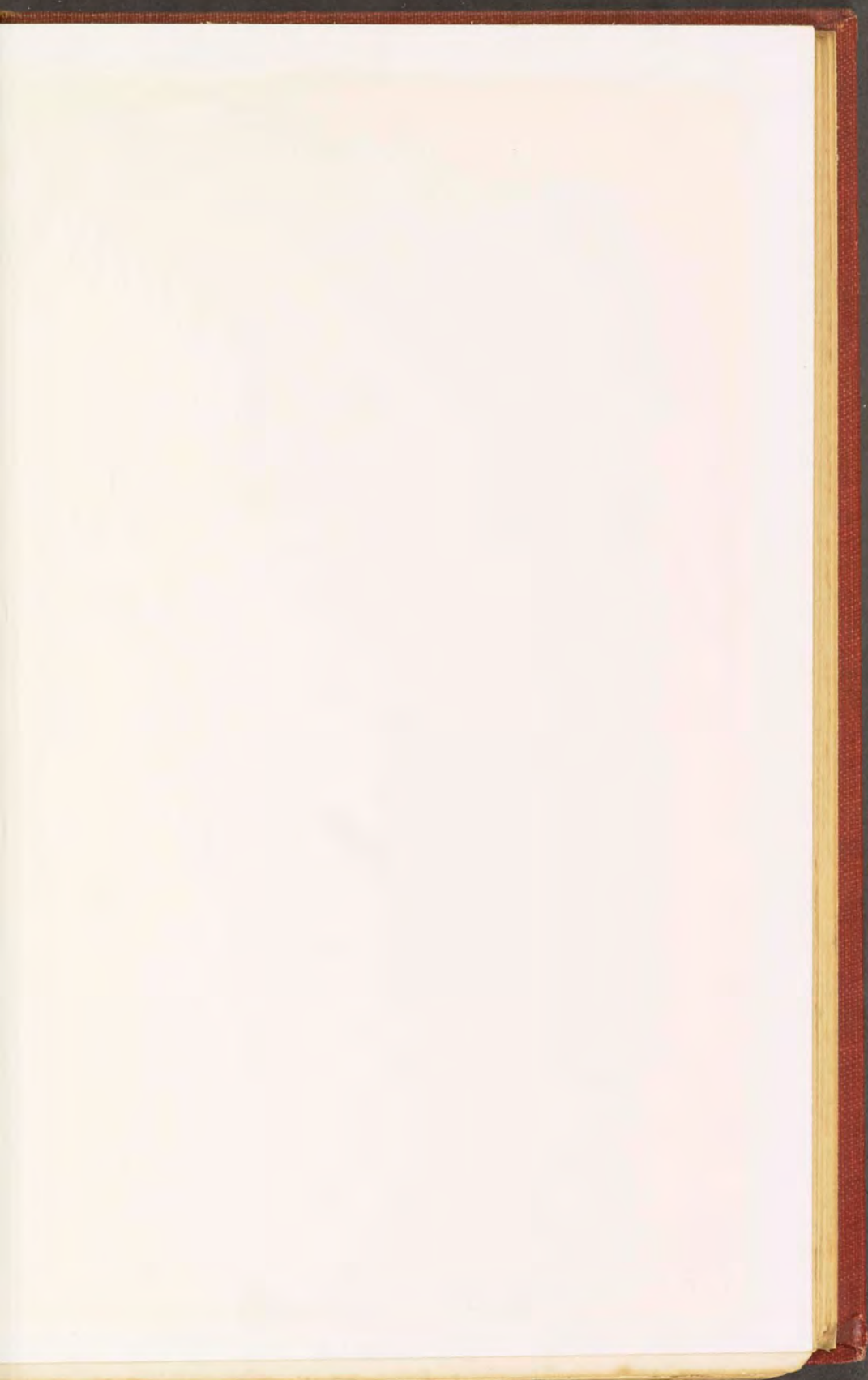




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THE DIAMOND TRAIL







CERIPÍAO (LEFT) AND BENITO.

(Frontispiece)

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THE DIAMOND TRAIL

*AN ACCOUNT OF TRAVEL AMONG
THE LITTLE KNOWN BAHIAN
DIAMOND FIELDS OF BRAZIL*

BY
HUGH PEARSON
M.I.M.M., M.I.P.T., F.R.S.A.

WITH
PHOTOGRAPHS AND A MAP

LONDON
H. F. & G. WITHERBY
325 HIGH HOLBORN, W.C.

1926



MR. J. H. CROFT AND WIFE

RL613509

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PRINTED FOR MESSRS. H. F. AND G. WITHERBY BY
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FOREWORD

AT the time when the Younghusband Expedition to Thibet was imminent, I happened casually to mention to a young officer who was accompanying it that I had once come across an extraordinarily interesting but unsubstantiated statement, attributed to Marco Polo, that there were at Lhasa images of Buddha decorated not with turquoises, but with corals. The lad's eyes lit up, and, keen though he was on what the military adventure in that mysterious land might have in store for him, it was, obviously, the thought of treading in the footsteps of the old traveller, and of being given the chance of gauging the truth of the tale, that fired his imagination. And I have often thought since: "Do we really appreciate how deep a debt we owe to our treasure hunters?" When Jason put forth on his quest along the shores of the Golden Chersonese, it was, I wot, something more than the winning of worldly riches that moved him. When our own Company of Merchant Adventurers sailed out into the sunrise in the *Red Dragon* and her consorts, they were, I ween, urged on by something more than the lure of "the wealth of Ormuz or of Ind." Had fabled El Dorado lacked its dream-like attributes, had the winning of it demanded nothing more than physical endurance, the world would have been the poorer, for, call it what you will—"the desire of the moth for the star," the spirit of romance, or by any other of the kindling phrases in which poets delight, and to which men of common clay try to give practical expression—it is as true to-day as it was when Solomon reigned that "Where

there is no vision the people perish." Mr. Hugh Pearson is no visionary in the rather sneering modern acceptance of the term; in his wide world-wanderings after oil or gold, iron or diamonds, he has never been Pixie-led; it has been no unsubstantial *ignis fatuus* at which he has grasped, to his own and his associates' confusion. Indeed, during the many years in which I have enjoyed his friendship it is the cold, minutely weighed prior-consideration given by him to the problems he has been called upon to solve which has always been in the ascendant. Once, however, that his course has been set, he has never failed to allow his imagination a wise liberty; and it is in the possession of that attribute which, reflected in his reports, has added as immeasurably to their value as it has to that of his latest literary production. Had he been content to dwell, however learnedly, only on the diamondiferous potentialities of Brazil, on how they were to be exploited, and what the reward would be, Mr. Pearson would merely have done what other experts, if equally qualified, would have achieved. In his case, however, he has, while never deviating from his objective, managed to gather together a mass of information regarding local customs, habit of thought, prejudices, not to mention the animal and vegetable features of Brazil, which, even though not strictly germane to his immediate subject, cannot but prove of the utmost value, both to those who may be desirous of testing his positive and theoretical conclusions on the touchstone of practical proof, and to those who may be thinking of seeking in Brazil other fortunes than those which her gold and gems hold out, and which a close and careful study of the land itself and of its people can help to win. Commercially and industrially Brazil, judged at least by European standards, is to all intents a virgin proposition. It is true that (in 1923) her imports bulked out at some £50 millions, of which the share of the United Kingdom was £13.4 millions, and that of the United States £11.3 millions; and that her exports of coffee represented over £70,000,000 in 1924, of tobacco

30,000 tons, of cotton 130,000 tons, of rubber 21,000 tons (the industry has been depressed of late years owing to causes too well known to need recapitulating), of sugar 35,000 tons (an amount equal to the pre-war average), of timber 150,000 tons, of oil seeds 96,000 tons, of frozen and chilled meat 60,000 tons, and of iron ore some 25,000 tons. It is also true that in the decade to 31st December, 1921, Brazilian manufactures practically doubled, and that in the ten years, ending 1923, the value of their output was sevenfold. It is also true that of the foreign capital invested in Brazil £270,000,000 is British held, that her population, which stood at 17,371,069 in 1900, was returned at 30,635,605 in 1920 (including, in round figures, half a million Italians, a rather less number of Portuguese, a quarter of a million Spanish, fifty thousand Germans, and ten thousand British); that some 30,000 kilometres of railways are in operation, and that there is a regular service of vessels over 17,000 miles of the 30,000 miles of navigable rivers in the land. But, as against this has to be set the fact that Brazil is the fourth largest country in the world, and that, if her natural resources are practically limitless—according to a report made in 1924 by the Commercial Secretary to the British Embassy, notwithstanding that many of the so-called national manufactures are “hot house plants,” which owe their being to excessive protective duties, “there is a large and legitimate field of development for industrial activity having direct relation to the natural resources of the country, facilitated by cheap hydro-electric power,” in respect to which it has been claimed, but on what authority I do not know, that the waterfalls of Brazil represent 40,000,000 kilowatts—the ratio of population to square kilometre, though as high as 18 in Rio de Janeiro, 17.8 in São Paulo, and 11.1 in Minas Geraes, sinks to microscopical proportions in the sparsely inhabited areas, and that, accordingly, however notable the advance in production and purchasing power may appear to be, it does, in fact, represent nothing more than the faintest of

scratches on the surface of her potential wealth, and cannot well continue to do otherwise, unless invigorated from without.

The problem is a complex one; and, in certain respects, it is akin to that with which the Commonwealth of Australia is faced, where, with an all too scanty population, the attempt is being made to give an industrial status to a country whose prosperity has hitherto been mainly dependent on the output of raw materials. In the case of Brazil there is the added complication that the export taxes on produce and minerals are among the principal sources of revenue; and that, furthermore, apart from economic issues, there are political considerations which, also, need only be hinted at, but which cannot be ignored—Brazil, for example, in 1824, gave her adherence to the Monroe Doctrine, while the question of the Latin-Americas is not an unburning one to the United States with her mercantile marine ambitions and her constantly increasing reliance on external markets, following on the gradual saturation of the domestic demands for home products. The immediate point, however, is that, even before the Great War, a slowly growing scarcity in the essentials of life was beginning to make itself felt, and that, since that upheaval, we have witnessed an immense growth of industrialism, which, in its turn, will require outlets for the inevitable overflow. When the purchasing power of the nations has been restored, these outlets have to be found, and, simultaneously, the question of the feeding of the world will have to be answered. The only lands to which we can look are those whose resources have not been sufficiently or scientifically tapped, and among such lands Brazil looms, perhaps, the largest. But her potentialities cannot be proved without capital; to induce its inflow public opinion has to be stimulated; and in that process the methods of peaceful penetration of such men as Mr. Pearson, who, coupled with the power of absorbing their environment, have also the gift of imparting their knowledge to others, are a dominant factor.

FRANK BIRDWOOD.

PREFACE

My friend, Mr. Birdwood, having introduced me to the public, it is only necessary for me to give my meed of thanks to the many friends who encouraged, and helped me when I was unable to help myself, owing to a serious physical breakdown in health. However serious in itself, it gave me the time to write *The Diamond Trail*.

Mr. Birdwood mentions the potential possibilities of Brazil, and my whole book has the same theme as its groundwork, with a coloured thread all through, directing attention to the need for personal application of everyone in the country. It is only by hard work that wealth can be created and utilised. That this is being realised more and more is a great pleasure to me. His Excellency Dr. Goes Calmon, the Governor of the State of Bahia, has kindly sent to me the latest information from the District treated in my book, and I am pleased to record the fact that the railway which ended at Bandeira de Mello has been extended a considerable distance nearer the Diamond fields, and the terminus at Machado Portello has advanced to near the City of Rio de Contas. Even the Falls on the Bromado, upon which I banteringly make some remarks, have been utilised to some extent—a promise for the future. The area opened up in this vast region holds untold possibilities when irrigated and thoroughly developed. Natural produce (apart from cattle raising), with cotton leading, will probably be the greatest asset, but timber and minerals are not to be overlooked and forgotten.

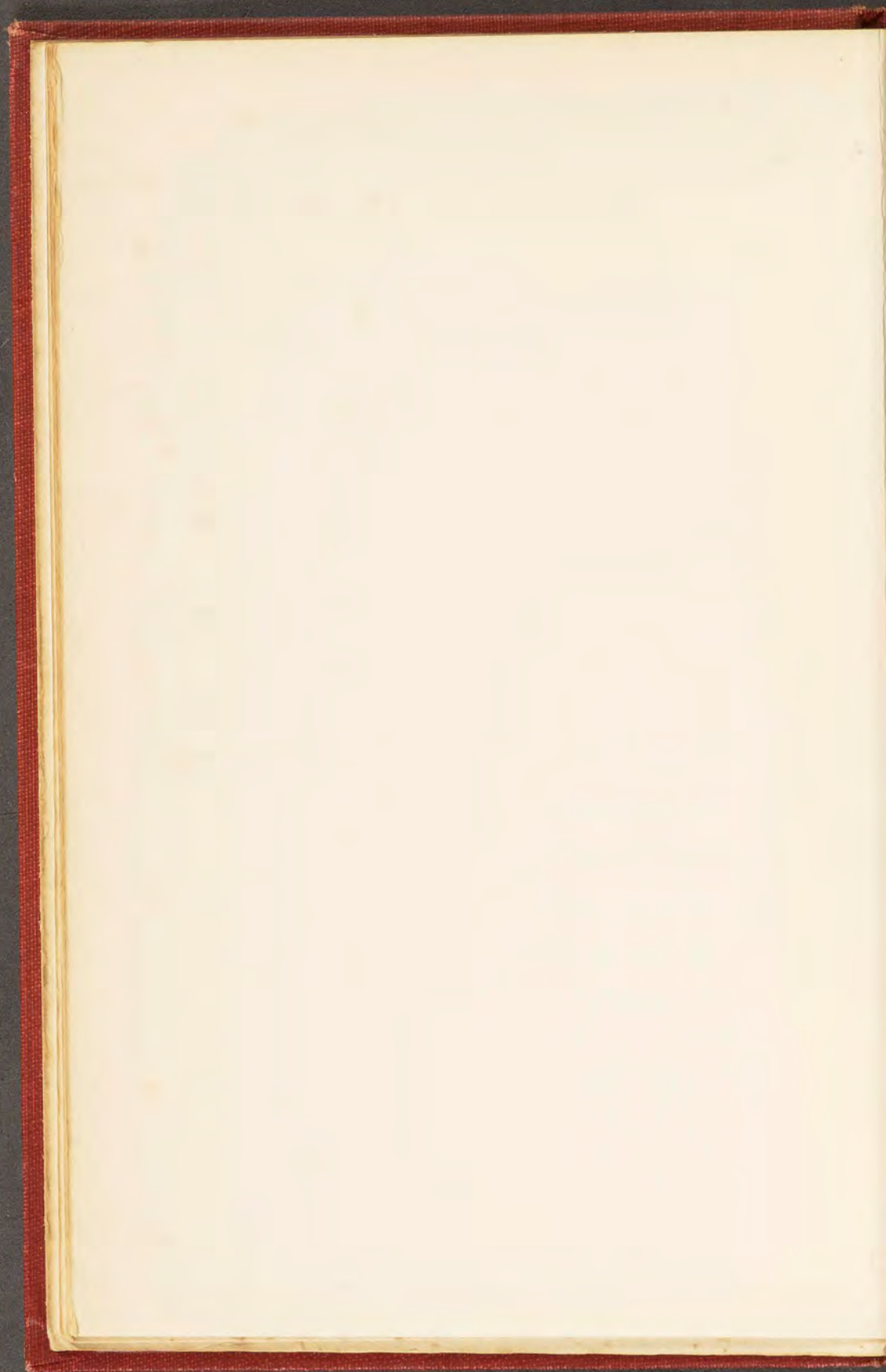
Finally, strangely enough, it is recorded that emeralds have been discovered, and also lead-silver ore. It is too early to do more than state the fact, and draw attention to my statement that it was these treasures the original explorers of Brazil set out to find without success.

In conclusion I thank His Excellency the Governor for his kindness and courtesy, and also Messrs. Frank Birdwood, S. C. Gilmour the "Travel Editor" of the *Field*, F. Rushton Ablett, and G. W. T. Girdwood, with other friends for photos, which, while not all reproduced, none the less leave me their grateful debtor.

HUGH PEARSON.

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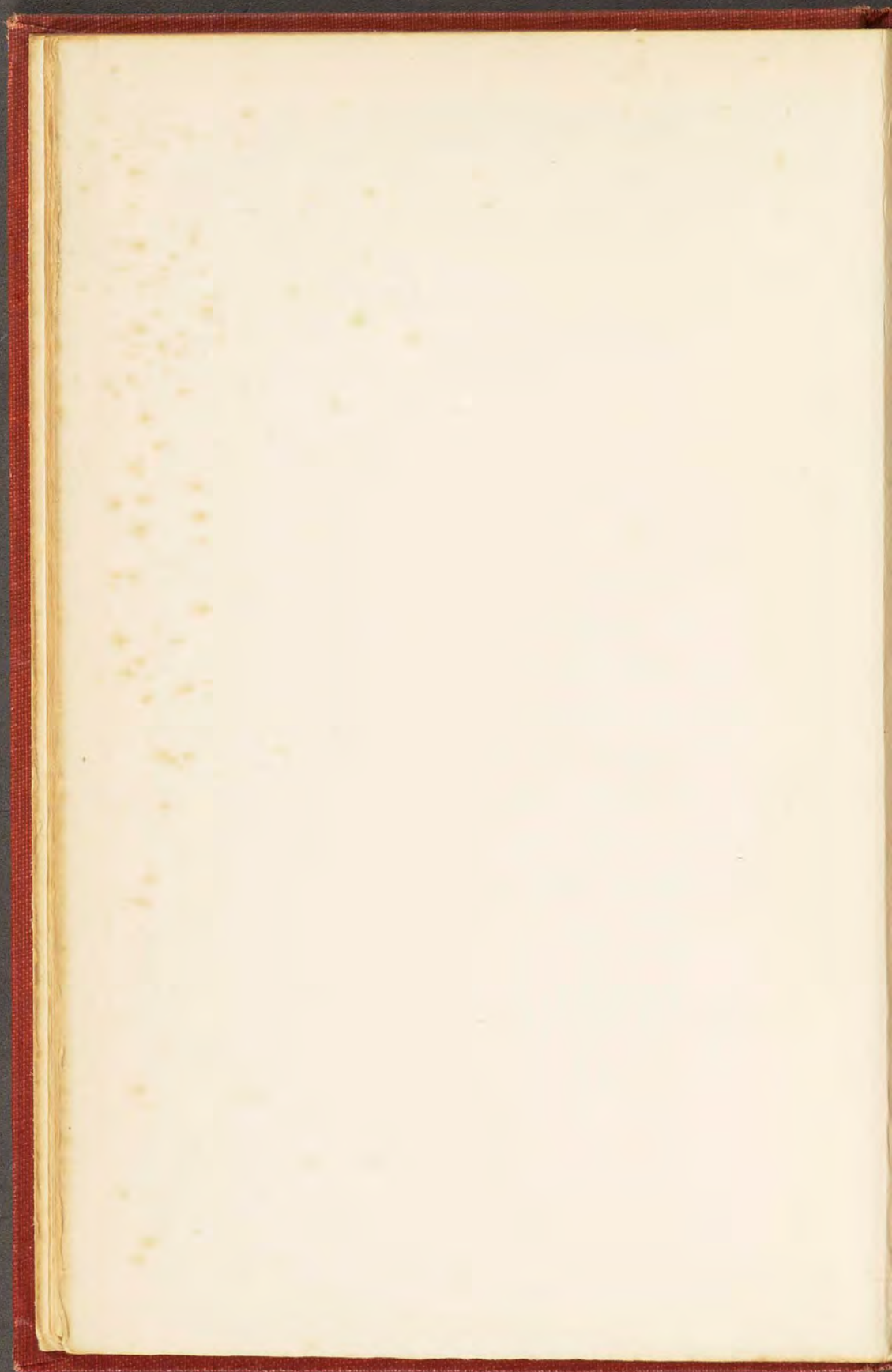
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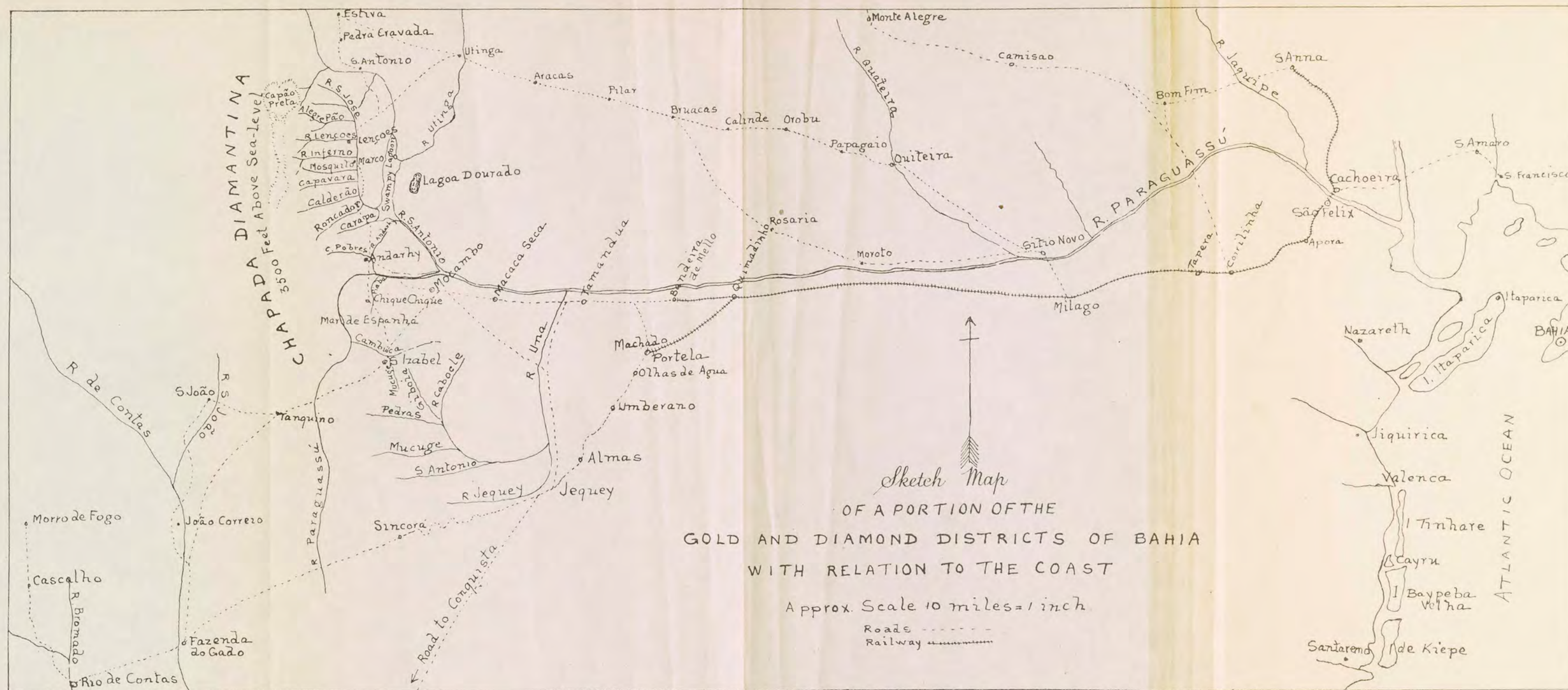
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THE DIAMOND TRAIL

CHAPTER I

EQUIPPING AND QUITTING

It is astonishing how much imagination passes for honest truth in filling up of gaps in our knowledge, especially when the opportunity arises to give advice or issue a warning to an adventurous friend undertaking some enterprise out of the ordinary. This was illustrated with variations when the writer made it known that he had accepted a commission to explore for diamonds in the Diamind fields, situated in the little known interior of the State of Bahia, Brazil.

Even to this day the data then collected raises a smile. The wonders to be seen and the riches to be found appealed to some. Others dwelt on the dangers of fevers, plague, and all the ills to which frail humanity falls a victim. Then there was hunger and thirst in the bad lands; great slimy snakes in the swamps which were so big that the unwary traveller was only a tit-bit; unknown dangers in forests; man-eating fish in the rivers; and parasites, poisonous biting insects of every kind; and oh, the savages!

This catalogue was merely the *raison d'être* for the good advice given, and the recommendations made on every conceivable item of equipment and conduct. Both were

excessive, and as it happened quite unnecessary, as previous pioneering experience in Rhodesia had been an excellent preparation for the work to be undertaken.

For the benefit of those interested I may state that my outfit was simple, and mostly consisted of light summer suits as worn in England, with under-clothing to correspond, and khaki for the interior, with strong, but not heavy field boots. In choice of foot-wear, every one has his own ideas, but for either walking, or riding, in the tropics, I have found field boots the best, unless in the swamps of Borneo, and Sumatra, where strong canvas boots with leather toe-caps and heels, and good fitting puttees, are the best, as the canvas allows the water to come and go with freedom, and adds to the comfort of the traveller, *and they dry quickly without losing their shape.*

A water-proof sheet made so as to be either used as a ground sheet, or a cloak as occasion demands, and good, strong, closely woven, mosquito curtain, and camp bed, completed the outfit unless fire-arms are included. A Winchester rifle was selected, because ammunition for this weapon can be obtained all over Brazil—an important consideration when a lengthy stay is anticipated, and it carries quite far enough for everything likely to be met with. A shot-gun is essential. In most cases it is better than a rifle as protection against snakes, for example, and provides sport with food for the pot when big game cannot be found, and it is very scarce. A revolver may also be considered necessary, in which case any pattern fancied will do. Personally, I never needed one. The only things I fired at with a revolver in Brazil were a snake or two, and a nest of hornets. For the first a stout, reliable stick would be more effective, and it is much better to leave the latter alone.

It is recalled, however, that on one occasion it was considered wise to demonstrate that the party was armed. This was in the far south-west of Minas Geraes. Roving bands of gypsies were making their presence disagreeable by plundering where they could do so with impunity. At one place in the open "campo" (it would be called the

veldt in South Africa), we came across evidence of this in the remains of broken boxes and a destroyed kit-bag, and so when we encountered a party we were prepared for whatever might happen. My revolver was placed convenient to my hand, and the declining sun shining on the nickel-plating, emphasised the fact. Riding at the head of the troop of mules according to the custom of the country, I passed the gypsies with an unconcerned good evening, which was returned in the same manner. My muleteer, cook, and personal attendant afterwards confessed that had the gypsies attacked us it would have been, to translate what they said into Scotch: "A bonnie fecht."

This remark is a reminder that there are no Scotsmen known as such in Brazil, or elsewhere abroad for that part. We are all Englishmen. Of course educated people know the difference, but seldom take the trouble to make any distinction, and as for the ordinary inhabitant of the interior of Brazil, to insist on one's right as a Scotsman, Irishman, or Welshman, would be to puzzle him without any compensating advantage. In the same way a Canadian is an American—a Norte Americano—and no amount of argument will alter the fact, and so we English speaking people are divided, once for all, into Englishmen and Americans—a significant combination which will not be lost on the thoughtful reader.

Having arranged everything to my satisfaction, I joined the s.s. *Thames* of the Royal Mail Steam Packet Company at Southampton. We had the usual excellent voyage, a perfectly calm sea, as, indeed has been the case in most of my subsequent voyages to Brazil and the Argentine. Storms are of very rare occurrence as compared to the North Atlantic, or even the Pacific. This is demonstrated in the construction of the vessels built by the Royal Mail Steam Packet Company for the Brazil and River Plate route, as compared with those of the Pacific Steam Navigation Company—which run to the West Coast of South America. But technicalities of ship construction are out of place here.

Shortly afterwards the s.s. *Thames* and ships of her class were withdrawn from the South American Service, and larger and more luxurious ships introduced. These have been repeatedly improved until now, in the m.v. *Asturias* of over 22,000 tons, the last word in ship-building has been achieved, so that to-day a trip to South America is one long round of health and pleasure.

Olinda, a small range of low hills near, and now forming a suburb of Pernambuco, was the first I saw of Brazil. As our boat approached the coast I observed that it was generally low-lying, with a fringe of cocoa-nut palms in the foreground, and a line of mountains in the distance. Recife itself (to give Pernambuco its Brazilian name), although a city of some 130,000 inhabitants, appeared from the sea as an irregular white-washed wall of varying height, pierced with windows and roofed with red tiles, over which straggling chimneys showed here and there. In front, and running parallel, a low breakwater, formed by a natural reef, was just visible. Over this the waves broke continually, obliterating with their crests, from time to time, all but the highest buildings.

The breakwater only affords protection to small coasting steamers, consequently we lay more than a mile from the landing place with a tumultuous sea between. This fact has been the means of training a hardy race of boatmen, who, for money, will dare the most angry rollers. But while admiring their courage, and dexterity, I did not at all fancy the risk, just for the sake of idle curiosity, of jumping amongst them from the ship's ladder, which had a treacherous rise and fall of some ten feet, to be afterwards pitched like a cork, and drenched with the flying spray, when I could remain on board and fish for sharks, which are numerous at this point off the Brazilian Coast, and fishing for them is certainly exciting sport.

In this connection I was greatly struck with the work of some of the fishermen in going out to the open sea, among sharks, on catamarans, with their feet continually in the water, and themselves often completely hidden in

the waves. They carry no light, and how they escape passing steamers is a puzzle to me. Perhaps accidents occasionally happen, but if so they are lightly considered and have no effect on the custom.

A similar practice to the above, and even more exciting, exists on the Cameroon Coast. The men make canoes out of cabbage trees so light and small that they carry them about from place to place as the necessity arises. It is no uncommon thing to meet fishermen with their canoes on their heads, like great hats. When they have caught all the fish they want, or can carry, they make for the nearest land, and racing the dangerous surf, wade ashore, reverse their frail craft to empty them of water, put them in the sun to dry, while they have a rest and a smoke, and then collecting their fish they put on their canoe-hat and march home.

While lying at anchor one day about a mile from the shore we had a good view of a number of men fishing, and I was astonished to see that, like a bicycle rider, they had to keep going to maintain stability. Immediately they stopped they were obliged to hang their feet over the sides, and when a shark approached they pounded the water with their paddles, and created such a disturbance that the cowardly monster was frightened, and left them in peace to resume their fishing. To keep their seat free from water they had small scoops behind them which they used with such rapidity that for the time being, they looked like some fabled monster of the deep with a shining tail.

Our stay at Pernambuco was short. We discharged a small quantity of general cargo, and took on board a few tons of pine-apples for Southern ports. It may be stated in passing that the State of Pernambuco is one of the most advanced in the Republic, notable for its fruit, cocoa, cotton, and sugar. About twenty-six hours after leaving we steamed slowly to our anchorage in the Bay of All the Saints in front of the City of São Salvador, or Bahia, as it is generally called. As this was to be my landing place I noted each feature with interest. The

aspect was certainly beautiful, and in striking contrast to that of the city we had just left. A small jutting promontory and a lighthouse separated two pretty inlets, with sandy beaches, and houses nestling amongst luxuriant vegetation, coco-nut palms waving over all. Gradually the land rose to an elevation of about 200 feet, with a church on the summit. Behind, and farther back, there is a steep escarpment facing the sea which, however, appeared to recede as we advanced—that is the escarpment was farther from the shore—revealing a level space of limited area upon which the lower and commercial part of the city is crowded into a number of narrow streets, and strong smells, thence, climbing the steep hill, has overflowed on to the undulating hilly country facing the bay for some five or six miles, and as the bay has a beautiful curve, and each eminence a church, the general impression is very fine.

We anchored about a mile from the shore just beyond a fort—a memento of the Dutch occupation—the guns of which are now only used for firing salutes. All restrictions being removed, every one crowded on to the narrow lower deck beside the gang-way, where, meeting the on-coming officials, and visitors, made an animated scene, while alongside numerous boatmen roared themselves hoarse in their endeavour to obtain a hire. Passengers, landing, had their baggage conveniently piled so that the cool, leisurely, inspecting Customs Officer, could do his duty without moving from his strategic position. The heat was oppressive, and the two hours spent in waiting for the liberating chalk mark was a disagreeable experience. Once, however, the small boat was reached, and the laughing boatman raised his sail to catch a welcome breeze, all discomfort was forgotten, and the reception on landing was so hearty that there was not a vestige of irritation left.

My new friend was an old Scotsman who had been fifty years in Brazil (mostly in Bahia), and although he was well over seventy he was hale and hearty, proving that the climate, while hot, is not unhealthy, apart from

occasional epidemics, which, it is a pleasure to record, are rapidly becoming a memory of the past.

Passing a market, which I hope has been reconstructed, as it was no credit to the city, we entered the main street, running parallel to the sea wall with a mule operated tram-line in the centre, and on either side lofty, plain buildings—shops, warehouses, and offices. The characteristic appearance of the thoroughfare still remains although the mules have disappeared in favour of up-to-date electric cars, and other improvements. Walking to the vertical elevator we were raised to the upper part of the city, emerging on to a small square, with the Governor's palace, and Municipal Buildings along two sides, and having a beautiful view of the bay, the lower city, and the surrounding country, including the island of Itaparica.

From the square a mule tram (now electrified) ran to the lighthouse already mentioned, and as the accommodation obtained for me was in the Rua Victoria we took the tram, passing en route, the theatre (a great white-washed building without any pretention to architectural beauty), a number of churches, and Campo Grande lying beyond the old Dutch fort. This was enclosed, and laid out with pretty plants, and trees, and had a striking monument in the centre. On one side there was the British church and club; on the other was the beginning of the Rua Victoria, and the residential quarter of the well-to-do, especially the foreign colony. Each house stood in its own grounds, surrounded by trees and pretty flowering plants. It was in one of these run as a boarding house by a French lady that I found a resting place while preparations were made for my journey into the interior and the Diamond fields.

The few days' delay permitted rambling all over the place, and, apart from the closely built commercial city, and the low portion stretching from it towards the Rio Vermelho, everything was delightful, strange, and new, and although something of the manners and customs of the negro population of Brazil was known to me it was

an experience to be my own witness, and wandering from the common track, discover fresh beauty for myself, amongst the luxuriant vegetation, in the broken hilly country surrounding the lovely bay. Many a primitive habitation was found where least expected, embowered in foliage, and fruit trees, with naked children playing in the sunshine as free from the influence of the city as if it was a hundred miles away. Such scenes are a survival of the long forgotten past when there were no cities, and when a crowd of dusky neighbours, men and women, were seen dancing, according to their kind, it was to me reminiscent of Africa, the only difference being that their splendidly developed bodies were not entirely naked.

Fruit trees have been mentioned. They are in great numbers and of many kinds, and without attempting to enumerate them it is worth drawing attention to the fact that what is considered by some as the three greatest benefactions to mankind in the world of fruit are well represented—the banana, coco-nut, and orange, including the pipless variety, for which Bahia is famous. No one who has tasted this luscious fruit is likely to forget the pleasure, especially as prepared and laid on the breakfast table. The skin is cut to represent the petals of a flower, revealing the juicy golden ball within, which, having no pips, and an exquisite aroma, and flavour, is the acme of citrous luxury.

All down the coast from Pernambuco there is a fringe of coco-nut palms, and the astonishing thing is that their true value has not been realised earlier, with organised collection of the nuts, and the establishment of a successful copra industry. It will be done some day, and since the palms are prolific, and the collection easy, with suitable shipping facilities, the reward to a well organised, and well managed company should be high. Something of the same thing applies to bananas, with a good market in the Republics to the South.

In the above remarks the strong points of Bahia, and its surroundings, have been dwelt upon. But many Brazilians, natives of other States, look upon it, with its



HUT AND BANANERA, BAHIA.



coloured population, as a negro city, and not Brazilian at all, as a São Paulo friend informed me, meaning that the great majority of the people were not of Portuguese origin, in which he was correct, as by far the greatest number are descended from the slaves of the bad old days. To-day most of them are very poor, and, perhaps, as a consequence, are compelled to seek attractions and amusements in quite different directions from those of the whites. For instance, there is very little movement in their streets after dark, and the theatre is so poorly patronised that it is seldom open. Here again, however, another element comes into play, which makes it impossible for the ordinary native to understand and enjoy the performances. I have been at an entertainment in São Paulo, where six different languages were represented on the programme—English, French, German, Spanish, Italian and Portuguese. But Bahia has not got the large foreign population of the city named, and so travelling companies generally go farther south, consequently the few foreign residents have to spend their evenings as best they can.

Hotels, for similar reasons to the above, are few and mostly inferior. The Sul Americano, however, is a fine building, and affords accommodation, and good dining facilities. There friends meet in the evening, and from the flower-decked verandah or patio, enjoy the beautiful view of the wide spreading bay, and incidentally a cool drink, of which there is the usual ample choice.

During the day it is in the lower city that activity prevails, and all business is transacted. This consists of many kinds of imported goods, and the exports of piassaba, rubber, cocoa, tobacco, cotton, cocoa-nuts, whale-oil, sugar, and also diamonds and carbons—these will be dealt with later on. It was in the lower city that I hunted through the book-shops for something dealing with the country, and in doing so was surprised to find that a very large proportion of the books were in French, giving evidence that the educated people prefer the language and literature of France, to that of any other country.

Having found what was wanted, serious study became the order of the day, and it was only when a pressing invitation came from my friend, the late Mr. J. P. Wilson Rowe, to visit his whaling station on the island of Itaparicá that it was interrupted. This whaling station was one of the last survivals of a once flourishing industry. Embarking on one of my friend's small whale-boats—a broad-beamed, heavily-built vessel with one mast—we reached our destination without incident, although on another occasion excitement was created on board a Paraguassú steamer by seeing just such a boat as that described being hauled along at a terrific rate by a leviathan of the deep, with a harpoon firmly fixed in its body. It was making for the open sea, but the end of the adventure was lost to us as we proceeded on our way across the bay. Under circumstances such as those described a man stands beside the moving cable with an axe in his hand ready to cut it if the whale reaches deeper water than the length of the rope allows, or if anything happens to threaten the safety of the men. Shortly before my visit my friend lost one of his most experienced men. By some unexplained accident he got entangled in the cable as it was rushing over the gunwale, and as the velocity was terrific there was not the slightest chance of saving him. Indeed the tragedy was complete before his comrades realised he was gone. Notwithstanding this and other kinds of danger which readily occur to the mind, my friend had no difficulty in getting men. Whatever faults the negro may have he does not fail in courage.

Dangerous as such an occupation must be it would be accepted by many in preference to cutting up the whale and boiling it down. There was a monster on the beach when we arrived, and men were busy transferring the blubber to the boilers. The stench was great, and after a hurried inspection a walk along the beautiful palm fringed beach was preferable. Unattractive as the flesh looks it finds a ready sale amongst the poorer inhabitants, who get it for less than a penny per pound.

The opportunity occurred for me to taste whale steak but my courage was not equal to the ordeal of the experiment. An American man-of-war visited Bahia, and friends of mine entertained the officers to dinner. An invitation was sent to me, but being unexpectedly detained the dinner was in progress and the special American dish which was to be a feature had been served, so I expected to carry on at the point the dinner had reached. This, however, was not to be, and amidst much fun a covered plate was placed in front of me. The repartee passed round at my expense aroused my suspicion that all was not as it seemed, and I raised the cover with special care to the amusement of all. It was black beans and whale steak, and if the truth was known there was more than one victim of that joke.

CHAPTER II

A GLIMPSE INTO BRAZILIAN HISTORY

As maps are essential to making a book of travel intelligible to the reader, so a knowledge of the history, people, and salient features of a country are necessary to the traveller himself, if he intends to make the most of his opportunities. It was with this idea in view that I undertook the study mentioned in the last chapter; and to enable readers to accompany me in my wanderings, and take a personal interest in Brazil, I will briefly touch on some of the most striking events, and facts, relating to the Republic, without assuming the role of historian. I may suggest, however, that a careful study of the history of Brazil would well repay the time spent. It would be found that there are incidents in the development of the State well nigh unique in the history of nations. What people, for example, can boast of having deported three monarchs, and carried through an even greater number of far reaching revolutions with practically no bloodshed? Certainly the Anglo-Saxon race cannot claim such a distinction. When England quarrelled with their King they chopped off his head, and when a revolution was in progress it was dominated by a determination to exterminate each other; and their cousins on the other side of the Atlantic paid dearly for their present union and greatness. Even the French with all their polish, and refinement, wallowed in blood when great national changes were being introduced. Much the same thing can be said of all the nations of Europe, and that too, without the excuse which Brazil can justly claim.

It was only in 1808 that the first printing press was introduced into the country, and even then it was under the direct influence of the Government, and principally used in propagating a sycophantic attitude towards the Royal Family, which shortly before had arrived from Portugal to escape the clutches of Napoleon. In fact, the two events synchronised, and the printing press was a mark of Royal favour.

The people received the Regent with every demonstration of joy, and would in all probability have remained loyal, had a reasonable policy been adopted. But whatever may have been the intentions of Don João VI, he failed in this, and to add to his sorrows, he favoured the Portuguese, who required little encouragement. They had been accustomed to oppress the Colonists by decrees issued from Lisbon, and continued under the altered circumstances to act as being superior to their new associates. For a time their polish, and the magnificence of the Court blinded the simple inhabitants of Rio de Janeiro to their faults, but as they became accustomed to their European manners, and realised that the main object of their new visitors was to exploit them and their country, a feeling of aversion arose, which no amount of published adulation in the new *Gazette* could gloss or hide. Especially did the feeling become strong when native born Brazilians entered the lists, and demanded titles, and emoluments as their right. Each one of such disappointed place-hunters became an inveterate enemy of the new order, and never missed an opportunity of fanning the flame of rising discontent—a discontent which was eventually to become so strong as to drive the Portuguese from the country, and end in the consummation of the first revolution.

This initial success, as will be understood, found them ill prepared for their new responsibilities. The great mass of the people were illiterate, and the remainder without any experience to guide them in their new duties. They had no traditional rights of popular liberty, nor the institutions that arose from such freedom, as, for example,

was the case of the American Colonies when they gained their independence. If we remember all this, the wonder is that they have managed so well and done so much. To have maintained the integrity of their vast territory is a great feat, and in itself an answer to the prejudiced, and often ignorant, statements we sometimes see in the daily press. Revolutions there recorded are often nothing more than glorified riots. Some time ago there appeared a sensational statement that a large number of banks had failed in the State of São Paulo, with all the harrowing details of ruin. Upon investigation it was discovered that the affair was nothing more than the collapse of a second rate firm, with a number of branches, trading under a banking title. Reprehensible on the part of the traders it is true, and excellent copy, without responsibility, for the local foreign reporters, but Brazil suffers all the same. It affects the external credit of the country, whereas the riots that are reported from time to time have no influence on the policy of the Republic, nor in any way affects its financial stability. In fact, in many of the other States they are not even known to have occurred. It would be difficult to imagine any local dispute in Para having more than an academic interest in, say, Rio Grande do Sul. Each have their difficulties to face, and problems to solve, but they are so dissimilar, that there is no real identity. It would be more reasonable, in view of the greater educational facilities, to expect the people of New York to be familiar with the local requirements of California. The distance is about the same, but the North American States have the advantage of being situated in equal latitudes, whereas the Brazilian States extend from the Torrid Zone, at the Equator, to thirty-three degrees south of that line, and thus well within the temperate region, consequently having a greater range of climate, and natural productions, to say nothing of the difference in the people themselves.

Latitude is responsible for much but does not necessarily mean everything. Nor is any difference of a mathematical character. Many circumstances tend to

modify the conditions of life, but after allowing for all important factors, Brazil has greater diversity than the United States of North America, and the approximate distance given shows that it bears comparison with the great Republic of the North. In fact, when Alaska is excluded Brazil is the greater of the two. The actual area is given as 3,190,000 square miles for Brazil, and 3,024,000 square miles for America. These are convincing figures. The ordinary individual scarcely realises what 3,000,000 square miles mean, but he knows that the United States is a great country, and since Brazil has a larger area it too must have potential greatness.

Brazil was discovered as the result of an accident, and strangely enough twice in the same year—1500. The first to see land south of the Equator was Vicente Yanez Pinzon, one of the famous band of heroes who crossed the Atlantic with Columbus on his first voyage of discovery. This occurred on the 26th January of the year named, but the event is not generally mentioned by Brazilians. This may arise from the fact, that he navigated from the point of his discovery, Cape St. Augustine, just south of the present city of Pernambuco, to the north, discovering in the course of his voyage the mouth of the mighty Amazon, instead of to the south, where the most important part of the Republic lies. Or as some suppose, the omission to give credit where credit is due, arises from a sense of patriotism. Pinzon was a Spaniard, and as such a rival to the Portuguese, and these, although no favourites, are preferred as being ancestors of their own. Be this as it may the ordinary citizen does not acknowledge this item of history, and ascribes the discovery to Pedro Alvarez Cabral.

Vasco da Gama returned to Lisbon in 1499, having rounded the Cape of Good Hope, and discovered the sea route to India. This epoch making event aroused tremendous enthusiasm in Portugal, and preparations were immediately undertaken to take advantage of the discovery. Gama anticipated trouble on the part of some of the Eastern Potentates, and to meet this, and compel

them to trade, and acknowledge the Christian religion, a powerful fleet was made ready and put under the command of Pedro Alvarez Cabral, a most capable man. He left the Tagus on the 9th March 1500, after having his fleet, and enterprise, blessed the previous day, and a banner entrusted to him by the King in person.

Before reaching the Cape Verde Islands they got into trouble. A storm arose and scattered the fleet, and one vessel returned to Lisbon. The remainder reunited and Cabral steered far to the west to avoid the calms usually encountered on the Guinea Coast. In this way he drifted into what is now known as the Brazil current, and, assisted by storms, was driven completely out of his reckonings. On the 24th April he was astonished to see land. This was a hill which he subsequently named Mount Paschoal, and as such it is known to this day. He gave it this name in honour of Easter—the time of the year he first saw it. The actual landing place was Corôa Vermelha at Porto-Seguro in the State of Bahia.

Writing of names, it is interesting to recall that Cabral's name of Vera Cruz did not long remain the name of the new land. A wood was found which gave a beautiful red dye, and as it became known in the export trade as Brazil wood, the country itself was referred to as "the Land of Brazil Wood." In time, the words "wood" and "land" were omitted, and Brazil became the name of the country, at the expense of the True Cross, much to the indignation of faithful Churchmen. One energetic brother declared it was a disgrace, "that the cupidity of man should change the wood of the true cross, red with the real blood of Christ, for that of another wood which resembled it only in colour." Brazil itself is supposed to be derived from the Portuguese "brazá," meaning incandescent—burning red, hence brazier, an open pan for burning charcoal.

A storm in 1503 destroyed the greater part of the second expedition. Amongst the drowned was the commander, and by this accident Americus Vesputius became chief, and had the honour of discovering the Bahia de

Todos os Santos (The Bay of All the Saints), a protected sheet of water affording a secure harbour at all times to ships of the greatest draught. It has, however, a tricky entrance and many vessels have come to grief when least expected.

The first of this long series of disasters was that of Diego Alvares Correa, who, in 1510, had the misfortune to lose his ship and all his companions. He only escaped himself by his presence of mind in taking advantage of an unexpected piece of luck. This was in securing a gun and some kegs of ammunition from the wreck. With his fire-arm he demonstrated to the astonished Indians what a wonderful man he was, and his use to them by frightening away their enemies. In this way he ingratiated himself into their favour, and became a great man amongst them. He received the name of Caramurú (man of fire) and married Paraguassú, the daughter of Itaparicá chief of the Botocudos. Both these names are preserved in the Paraguassú River and the island of Itaparicá in the Bay of All the Saints.

Some years after his providential escape a French vessel called at the bay and he shipped in it for Europe, taking his Indian Princess with him. His idea was to put himself and all his influence with the Indians at the disposal of the King of Portugal. The French, however, had other schemes on foot. He was taken to Paris, with his wife, and became the lion of that city. Contriving to escape he returned to his home among the Indians. Here his power provoked the jealousy of a tyrannical Portuguese official. He was arrested and carried on board a ship in the harbour. This was too much for the Indians. They rose in all their power and threatened to exterminate the nascent settlement if their white father was not restored to them. The jealous official bowed before the storm, and Caramurú returned to his people amidst much rejoicing.

He founded a village, and in gratitude for his preservation called it San Salvador. The official credit, however, is given to one Thome de Souza as having founded the

present city in 1549. Be this as it may, one cannot read the dramatic story of Caramurú's life, without recognising the power he exercised over the Indians for the good of the whites. And although an old man when de Souza appeared he assisted him in laying the foundations of the new settlement, as distinct from his own, still known as Villa Velha. San Salvador became the Portuguese capital in America till 1763, when it was transferred to Rio de Janeiro, so that the administration would be nearer the scene of conflict with the Spanish. The Portuguese occupied the left bank of the Rio de la Plato. The right to do so was disputed by their neighbours—the Spaniards—of the opposite margin. From words they came to blows. The conflict continued off and on for years, but at last the Portuguese were forced to retire. The land then conceded in time became the Republic of Uruguay, and Rio de Janeiro continued to be the capital of Brazil.

For some years after the discovery of Brazil the land to the south of Bahia was practically *terra incognita*. The first navigators to visit the silent waters of Nictheroy—"hidden waters," as the Indians appropriately named the famous bay (the name is still preserved in the town of Nictheroy on the opposite side of the bay from Rio de Janeiro),—were de Solis in 1515, and in 1519 Magellan, who named it Bahia de Santa Lucia. It remained, however, for Martin Affonso de Souza, in 1531, to give it the name it retains to this day. He imagined that it was the mouth of a large river, such as the Amazon, and as he entered it in the month of January, he called it the river of January—Rio de Janeiro. Anyone who visits the famous port must be struck by the thought of how superficial must have been the examination, and acumen, brought to bear on the subject by de Souza. There is nothing to denote a large volume of inland water flowing through the bay. His wisdom was in keeping with his decision in rejecting the magnificent sheltered harbour as a site for his new settlement, and in selecting São Vicent, now an insignificant village in the present State

of São Paulo, as the home of the second European Colony in Brazil, Caramurú's village at Bahia being the first.

As a result of de Souza's report Rio de Janeiro was neglected by the Portuguese until they found that others were anxious to obtain a footing there, which became *de facto* in 1555 by a French expedition under Nicholes Durand Villegagnon. This gentleman had the honour of accompanying Mary Queen of Scots from France to her own country, but proved unworthy of the great trust committed to him as head of the French settlement. By a breach of faith he ruined at its inception what was a grand idea—the foundation of a kingdom in the New World where the reformed religion should be free from persecution. Villegagnon had been successful in obtaining the active support of the famous Admiral Coligny, and even the assistance of the King, but it was not to be. Apart from Rio de Janeiro being the first place in the Western Hemisphere where the banner of reform was first unfurled, and free men were at liberty to worship as they pleased, there is little to be proud of. No sooner did Villegagnon get established on the island, which still bears his name, in the bay of Rio than he threw off the mask, and showed that he cared little for the reformed religion, or any other religion. It was power he wanted, and everything which stood in his way was swept away. As usual in such cases he found willing tools, and the persecution of the poor Huguenots began. It makes sad reading, and is a lasting disgrace, branding Villegagnon as a most unscrupulous adventurer, who deceived his King as well as the poor victims who trusted to his honour.

His reign of absolute and dissolute power did not last long. In 1560 Mem de Sa, Governor of San Salvador, attacked the island and forced the French to retire to the mainland. The conquerors were too few to follow, or hold the position, so they destroyed the fortifications and carried away the artillery.

On the mainland the French allied themselves to the natives, and continued to maintain a more or less precarious existence. They were harassed by a collection of

Portuguese led by a priest, and aided by some Indians who sided with them. In spite of this the French might have been successful in making their position secure had it not been for a second visit from Mem de Sa. The Jesuits would not permit the Portuguese Authorities to forget the nucleus of French power that struggled for a footing under the Sugar Loaf, and did everything in their power to magnify the danger which threatened the Portuguese supremacy. As stated they were successful. Mem de Sa mustered all the available force he could command, and once more sailed for Rio. Here he soon crushed all resistance, completely destroyed the French force, and killed every Indian who had assisted them.

This obscure action fought out in an unknown corner of the world, and in which neither of the nations directly concerned were particularly interested, had, as the Jesuits foresaw, far reaching effects. It ended for all time the possibility of establishing a community opposed to the tenets of Rome, and secured Rio de Janeiro to the Portuguese. What would have been the history of Southern Brazil had victory been on the other side is difficult to say, and is best left to the imagination.

From the date of this victory the Portuguese definitely took possession, and the Governor, Mem de Sa, had the honour of founding the present city, under the name of San Sebastian, in commemoration of his victory over the French refugees on that Saint's day—January 20, 1567.

The peace thus secured remained unbroken for a long period—till 1710, when the French were again the aggressors. The city had increased in size and wealth in keeping with its opportunities, and the temptation to sack it was great. The attack, however, was repulsed and the prisoners treated with undue severity. This fact aroused great indignation in France when the news filtered through. A new expedition was fitted out privately, with the sanction of the Government, and placed under the command of one of the ablest officers in the French Navy. He lost no time. The city was stormed and

taken, and the booty obtained was so great that although one of the treasure ships was lost during a storm, on the return voyage to France, the adventurers received ninety per cent. profit, on the capital invested in the expedition. This was the last invasion of Rio de Janeiro.

During the period under review things had not been going quite smoothly in other parts of Brazil. England had a finger in the pie on several occasions, but perhaps the most important episodes were those of the adventurous Thomas Cavendish, who sacked, and burned Saint Vicente in 1591, and James Lancaster who took and plundered Pernambuco two years later. The French too, were active farther north, and for a time occupied Maranhão. The Dutch followed as the direct result of the incorporation of Portugal into the Kingdom of Spain. Holland was at war with the latter at the time, and consequently the Portuguese colonial possessions became the objects of special attention. They attacked place after place, till the whole coast, from Bahia to Maranhão, came to acknowledge their supremacy, and they continued in occupation for some thirty years, when they finally abandoned all claim to the territory they had conquered. The Brazilians are generous enough to acknowledge that the Dutch and their enterprise has been of permanent value to the country, especially Pernambuco, where they were most firmly established.

While the events recorded were occurring the Portuguese colonial policy was taking definite shape. We have seen that the first settlements were at Bahia and St. Vicente. Others followed till the whole coast from the Amazon to the Rio de la Plata was occupied. At first the Governorships were the unquestioned gift of the King, who, without much consideration for merit or qualifications, presented them to whom he would. As might have been foretold, this mediæval favouritism generally ended in failure, and created an upheaval in the little kingdom. Other adventurers, equally unsuitable, took over the responsibilities, and the whole struggling farce was repeated *de novo*. Names of places were

altered, and boundaries changed, according to the fluctuating fortunes, or fancies, of the time. Gradually there emerged a few great provinces, or "Capitanias," as these divisions were called, with more or less qualified officials, responsible to the Portuguese Government. This was, indeed, a great step in advance, but it was a necessity of the time rather than a far seeing policy. The wealth of Brazil was still looked upon as the legitimate property of the mother country, and everything was done to safeguard her interests at the expense of the colonists. No foreigners were allowed to travel in the interior, nor trade with the people. Everything had to be obtained from Portugal at enhanced prices. As a result of these restrictions only the barest necessities found their way to the interior, such as salt and iron. The importation of the last named was perhaps the most glaring injustice of all. Iron ore of the highest grade, and purest quality, existed all over the then settled portions of the country, and yet the people were prohibited from using it to enable a few favoured sons of Portugal to become rich. This arbitrary system of government continued in force till 1808, when the Prince Regent arrived in Bahia, and relieved the situation to the extent of opening the ports to the trade of all nations.

In the survival of the fittest arising from the long struggle for pre-eminence the Capitania of São Paulo took a leading place—a place it has maintained ever since. The "Bandeiras" (groups of men under leaders for the purpose of exploration), it sent into the interior became famous. Encouraged by the tales of the fabulous wealth of Peru, and the prospect of finding emeralds, they dared all dangers in their efforts to discover equal sources of wealth in their own great unknown land. They were doomed to disappointment. Neither silver nor emeralds were found, and incidentally I may mention the strange fact that the same is still true. With all its wealth in gold and metals generally, and precious stones in particular, neither of the two, which were originally so persistently sought for, has been found in anything but

the smallest quantity. This will be mentioned later on. Undaunted by their failure they continued their explorations, and while damaging their heroic enterprise by engaging in the slave trade—that is, capturing Indians and selling them to planters on the coast—their record is one of the most thrilling in the history of discovery. They penetrated as far inland as the foot-hills of the Andes, and founded the first settlements in Matto Grosso; over-ran Goyaz; and thoroughly explored Minas Geraes, which, of course, since the term means “General Mines,” only became known as such, after the discovery of gold in 1695. This was followed by the discovery of diamonds in 1720. This will be discussed in its proper place.

Bahia was not far behind São Paulo in its early explorations of the hinterland. Indeed, precedence might be successfully disputed, but unfortunately without affecting facts in the sense of achievement. This, however, was no fault of the Bahianos. It is rather due to circumstances. There was only one Minas Geraes to discover and occupy. All the same some reward came the way of the hardy explorers of Bahia. Gold was found in considerable quantities in several places, and while it enriched the original pioneers it had the far more important effect of attracting people to the districts where it was found. Towns were founded, and a permanent population settled in what had been a great lone land. Rio de Contas, and Jacobinas, are towns which originated in the manner indicated.

Later on—much later than Minas Geraes—diamonds were discovered. This opened up another part of the State, till then looked upon as a great sterile land, good for little but the breeding of a few degenerate cattle, and the support of the half-civilised men, who tended them, and raised some beans, and mandioca, for their sustenance. The diamonds changed all this. Nothing could affect the land itself, but the precious stones did the rest. To-day there are a large number of hamlets scattered over the Sertão—a term applied to the interior—with Lençoes (Capital of the Diamond fields), Andarahy,

Cheque-cheque, and St. Isabel da Paraguassú as commercial centres, and where diamonds pass from hand to hand with a freedom which would astonish the fair ladies who adorn, and are adorned, by their rare beauty.

On the whole, however, Bahia finds its greatest wealth to be on the coast. [This remark has only reference to present development, and is not in any way meant as representing a comparison between the coastal areas and the interior of the country.] The soil is exceedingly fertile, and grows all sorts of tropical, and semi-tropical produce. One writer goes so far in his enthusiasm to compare the Bay of All the Saints to the disadvantage of Rio de Janeiro "by reason of the admirable disposition of the land that surrounds it, above all in being suitable for agriculture." This to some extent has always been recognised by Brazilians. From a very early date sugar-cane has been cultivated with success, and on one occasion land was pointed out to me, which had been planted for hundreds of years, and was still giving excellent returns. Cotton, too, was successfully cultivated, while Bahia is said to have been the home of the first tobacco ever introduced into Europe. Other productions such as maize, rice, cocoa, etc., were introduced at various dates and all do well.

The first two cultures named alone demand a large amount of labour, which was difficult to find, and was directly responsible for the development of slavery. The Portuguese began slavery in Europe, and the Spaniards introduced the system into the New World, but it was only a question of time. All the colonies were struggling with the same difficulty and none could resist the temptation of preying upon the defenceless negro to meet their requirements. English colonies were no exception from their neighbours, and the black problem in the United States to-day arises directly from the importation of slaves which commenced at that early date.

In Brazil it reached greater proportions, and continued for a longer period, with a corresponding influence on the national character. The very liberality of the Constitution in granting equal political rights to all men,

irrespective of colour, or education, has permanently modified social intercourse. There is no repugnance on the part of whites, as in the United States, to intermarrying with the negro, or Indian. Indeed, those who possess Indian blood are proud of the fact. The result of this intricate fusion of races has produced a most complex character, both morally, and intellectually, while the colour passes through all shades from black to white. This applies to the whole Republic, but gradually changes from black predominating in the north to almost white in the south.

To mention the recent past, there is no question but that the abolition of slavery had a damaging effect on the plantation work of Brazil. This statement is one of fact, and does not enter into the morality of the compulsory labour of any man. In a country, however, so warm, and fertile, as the greater part of Brazil, there is very little inducement for the black man to work, and it must be said, that generally speaking, the negro is satisfied with a remarkably small amount of labour. He is quite happy when left to himself, his beans, and his rags. Those of a more ambitious turn of mind adopt a very independent attitude towards their employers, and demand relatively high wages, and are even then unreliable. The result of this is that all sorts of culture are crippled for lack of labour, and the enormous development of the coffee trade would never have reached its present dimensions had it not been for the introduction of Italians. Farther south the Germans are setting an excellent example of thrift and progress. Minas Geraes, too, is a great State doing great things. Mining and agriculture go hand in hand with industrial enterprise, and a pleasing feature of this activity is the fact that it is entirely due to the Brazilian people themselves. In this respect it is with São Paulo, perhaps, in advance of any of the other States in the Union, and if they would only be influenced by such a lead there would be no question as to the credit of the nation in the financial markets of the world.

CHAPTER III

BY RAIL AND RIVER

THE State of Bahia has an area of 426,427 square kilometres. In other words, it is as large as the British Isles, Italy and Belgium combined. This being the case it would be wrong to say, "I know every foot of it." Even the natives of Bahia themselves cannot lay claim to such a thorough knowledge of their country. The capital has a population of 220,000, and when the figures of all the other populous centres are added to this, and deducted from the total of 2,335,000 for the whole State, it becomes evident, that there are portions extremely thinly settled, and as a consequence, practically unknown—certainly to the ordinary traveller. Hence my experience, although not sensational, may prove interesting. It will, at any rate, give some accurate information about the Diamond fields, and that portion of the country which came under my observation.

My companions were an Englishman, Mr. H. T. Clarke, as assistant, and a Brazilian gentleman, Dr. Augusto Lacerda, to act as guide and interpreter. He was known as the "Doctor." This is a title conferred on all educated people by the Brazilians, and as a mark of courtesy extended to strangers. In the case of my friend, however, it was courtesy added to fact. He was a Doctor of Engineering, and a most pleasant companion. He knew the history of his State well, and was enthusiastic in describing its beauties, and its wonderful resources. As he had been several times to the Diamond fields he was in touch with the latest developments, and a storehouse of useful information, but like enthusiasts,

generally, he was optimistic to a degree scarcely warranted by the facts.

We left Bahia at one o'clock in the afternoon in a small steamer, which was fairly comfortable, and picturesque with its heterogeneous collection of coloured people, loaded with all sorts of goods. Especially noticeable were the female portion, because of their size, and extravagant dresses—both as to colour and material. Quite a number had a remarkable amount of hand-made lace, and large gold ornaments. All were in the best of spirits, and laughed and chatted in that light-hearted, careless fashion, characteristic of negroes under favourable conditions. They were evidently, for the most part, returning from the market, and had sold their country produce, fish, etc., and were taking home their own requirements.

As we steamed away the church dominated white-washed, red tiled city, interspersed with green foliage (due to the escarpment between the lower and the upper sections), the scene was one of great beauty, and as the trail of broken water that marked our course in an otherwise mirror-like sea increased, and small vessels with white sails came between us and the object of our admiration the picture was one never to be forgotten. The boats were making for various destinations round the bay, and up the Paraguassú River. Quite a large amount of trade is done in this way.

We made direct for the island of Itaparicá which is the largest of the numerous islands which lie within the bay. It is some twenty-one or twenty-two miles long, and has a number of villages. The industry consists of making salt, burning lime, and all the various operations associated with a number of whaling stations, even to the building of the boats used in catching the whale.

After rounding the island we entered the estuary of the Paraguassú. This river rises in the highlands of the State, flows through a portion of the diamond bearing district, and empties itself amongst the islands of the bay. It reminded me of Loch Lomond, only the hills were not so high, and hence not so impressive, but on

the other hand, the tropical vegetation was some compensation for this deficiency. The estuary has many sandbanks which change from time to time. This makes navigation somewhat difficult during the wet season especially, and only those who are intimately acquainted with the shifting shoals could take a vessel through in safety. During the day they are for the most part indicated by the stakes of the fish traps.

When calling at Casata we were offered four or five kinds of fish. One was like a mackerel, only it was much bigger than those caught on the Cornish coast. Close to this port, too, there is an extensive mangrove swamp. It was beautifully green above, but the ghastly skeleton-like roots grovelling in the mud below created a sense of nausea. This was not made any the less upon hearing that it was a celebrated breeding place for oysters. Tree oysters they are called from the fact that they are found clinging to the roots between low and high water mark. They are said to be excellent eating, and in spite of my uncomplimentary impression there is no reason that I know of why they should not. On one occasion a friend bought a small barrel of them for three mil-reis—then three shillings.

A little farther up the estuary a decayed Franciscan monastery was pointed out. It is said to have some very fine works of art, both in painting and carving, but it is now in a ruined condition, and the brotherhood is too poor to repair the ravages of time. One thing is certain: the founders had an eye for beauty as well as utility. The site is extremely well chosen from both points of view. It occupies an eminence, and is surrounded by low hills, and having winding inlets of the estuary on three sides. The utility lies in the great valley, which stretches inland for miles, and planted with sugar-cane. The soil is so fertile, that it has produced this crop for some three hundred years without any manure being used.

Shortly after this the river becomes narrow, and flows between banks timbered to the water edge with tropical vegetation of the creeping, and climbing variety, clinging

to many palm trees, which tower over all. This wild luxuriance has replaced cultivated land since the abolition of slavery. In other words, the labour supply was too uncertain, and expensive, to make it profitable to plant sugar-cane, or cotton, at the prices then prevailing and which had prevailed for years.

Over this stretch of the river the steamer took a very irregular course due to the sandbanks. Sometimes it almost touched the one bank, and then crossing the river, hugged the other bank for a time, till it was again forced to seek a safer course. As evening settled down to tranquil darkness, and the stars shone out with a bright metallic lustre in a moonless sky, the scene was exceedingly soothing, and peaceful, and when a silent canoe glided past, the white clad rowers, seemed so many ghosts. To enhance the sense of peace, and beauty, the fireflies added their flitting glory.

Our progress was stopped by a fall on the river. As a result of this obstacle there has grown up two important towns just below the falls. That on the left bank is called Cachoeira (meaning waterfall in Portuguese) and is the steamship terminus. The one on the opposite side is São Felix. Cachoeira has a population of over 10,000, and shares with its neighbour, in being the principal tobacco centre, not only in Bahia, but for the whole of Brazil. There is also a cotton weaving mill, and minor industries, such as boot and shoe factory, the making of soap and candles, etc. The result of this activity is one of prosperity and progress. The towns are well laid out with substantial buildings—a theatre, a hospital, and other public buildings, not to mention the double squat towered churches.

We reached Cachoeira at 7.30 p.m. and were met by a howling mob of negro porters. The Doctor was prepared for this reception, and we all stood on guard. Clarke threatened no less than death to those who ventured to come within reach of his brawny arms, and surveying his tall form, none cared to dispute his authority so the mob swept past us and literally cleared the deck of

every movable object, with, or without the owner's consent. It seemed to me that even the paddle boxes would have disappeared in the scrimmage had they been loose and portable.

After the commotion had subsided we jumped ashore, and walked across the street to the hotel, which was just opposite the landing place. This was called the Hotel of all the Nations, and run by a big jolly Frenchman, whose stentorian orders kept his scullions on the run. In record time we were enjoying an excellent cup of coffee, and smoking an equally good cigar, from one of the neighbouring factories.

The hotel proved to be a plain white-washed building, with the whole lower front open to the street, and facing the river. The front room was large, and high, with a number of marble-topped tables scattered about, and three or four chairs to each. Some of these had iron seats with a beer advertisement. The back wall was a great mirror, and a series of ornamental shelves containing all sorts of drinkables. In the middle, about five feet from the floor, was an opening through which the proprietor shouted his orders to his servants in the rear. The other walls were decorated with rude paintings extolling the qualities of various well advertised goods. A wide passage without doors led to a second room—a barn looking place—which seemed to be used as a store and lumber room. Behind this again and of equal dimensions was another space—evidently the kitchen and servants' quarters. In the dim and uncertain light, of a smoky stable lamp, and the glow of the cooking braziers, could be seen some coloured people, moving about and presenting a striking picture of light and shade. The distance from the front saloon explained the landlord's roar.

Ascending an unprotected stair, placed ladder-wise, we found that the space above, equal to the floor area below, was divided by cheap boarding into a large number of small rooms with a passage down the centre. The boards were white-washed, and about nine feet high. Above this the whole building was open to the tiles, and

in the darkness, with an occasional bat flying about, the impression was gloomy vastness, and the best thing to do under the circumstances was to sleep as soon as possible and forget the primitive surroundings.

At 4 a.m. I was awakened by much talking. It was the landlord and some of his guests who were making an early start. The thin partitions, and the open space above, sent the sound of their voices rolling through the whole rambling building, disturbing everybody. It seemed I had only closed my eyes when I was again awakened. This time it was the Doctor at my door. "Five o'clock," he shouted and I gave a groan. The train did not start until 7 a.m. and we had only to cross the river. Two hours was a big margin, but we soon found that it was a failing of the old man. He got excited, and fussy, if he had anything to do out of the ordinary, and to catch a train in this part of Brazil is no ordinary event. This can be understood when it is remembered that railways are few and far between. In the present case there were only three trains a week sent into the interior.

After a cup of coffee we got into a dug-out canoe. It was about twenty feet long, and when loaded with ourselves, and our baggage, there was perilously little free board. The current, however, was sluggish—perhaps the tide was in—and by sitting low, and still, there was no danger. The breaking day showed that the town occupied all the level space along the river, and was beginning to dot the hill sides with irregular patches of white-washed, red-tiled houses. These, however, were but faintly seen through a dense white mist, that was drifting from the river in fleecy like clouds, tinged with the first rays of the morning sun. On the opposite side, São Felix, the hills were still in thick misty darkness, and formed a striking contrast—a merely passing effect.

The station was a substantial building with the platform under cover. Early as it was the officials were at their posts, and our friend the Doctor, was soon in his glory, with a big bundle of new bank-notes in his hand. These were held by an elastic band, and ranged from

one shilling upwards, but having so many, and all being new, marked our party at once as being of some importance, and the Doctor's method of advertising the fact amused us very much. The ostensible object in going about with his money in his hand was to pay for tickets, excess luggage, and giving tips. The luggage was a tedious affair. Everything but hand-bags, and small articles which could escape the agent's eagle eye, was put on a platform which communicated the weight to a clock-like dial. The amount was read off by a negro, and recorded by a small, wrinkled, bloodless, spiritless, individual, who was possibly white. His lustreless eyes, denoted a hopeless monotony of life, which was quite oppressive, and when I saw him writing the details of our baggage three distinct times, I began to understand something of his feelings, and at the same time the necessity for so many officials. It also set one speculating as to the object of it all. Was it to prevent fraud, or was it to give as many men as possible occupation? In any case it was irritating to the traveller.

The train started well up to time with two engines—one at each end. The rear engine was to help us up a steep incline of one in fifty. This upward grade continued for the first twenty miles or so. Our carriage had sitting accommodation for twenty passengers. The seats were cane bottomed, and thus cool, and clean, and the backs could be reversed at the will of the occupants, to face, or sit with their backs to the engine. There was also a platform at either end, which we were allowed to use, much to our gratification.

When we started the carriage was full. There were a party of Portuguese, two Germans, and a mixture of all colours amongst the natives. None were of such individuality as to call for special notice, although no doubt, a physiognomist would have found such a variety of types an interesting study. To me they were so many critics, all wondering where we were going, and what was our business. Consequently, we were glad when this scrutiny became less, and less, by the departure of

one here, and another there, until we were nearly alone, and free to take full advantage of the passing panorama.

The railway continued to rise by varying grades and turned about in a most astonishing manner. This was explained as being due to a kilometre guarantee. It is true the hilly nature of the country made construction difficult and expensive, and called for many curves, but if a bridge which was going to cost £x could be avoided by a reasonable detour such a bridge was not built, and a graceful curve took its place, with an exchequer balance in the contractor's favour. The same principle was followed in connection with cuttings, and embankments, and so we enjoyed seeing a relatively large area of country for the actual distance travelled.

The scenery was often very fine. The continual changing of direction was full of surprises, and the fleeting vistas, down or up, some transverse valley very pretty, and when the back-ground was a mountain mass of dark foliage, picked out with flaming banks of colour, the effect was truly grand. The vegetation was luxuriant everywhere, with here and there places cleared, and occupied by bananas, cocoa-nut and other palms, tobacco, mandioca, beans, and even small patches of rice were occasionally seen in the valleys. Sugar-cane and cotton were also grown, but it was tobacco which took the premier place in the first twenty miles from São Felix. This was in small areas all over the sides of the hills, and as there had been abundant rain everything was beautifully green.

The homes of the people, like the tobacco, were found all over, and often occupied romantic situations. They were primitive in the extreme, being simply wattle and daub, and in some cases not even daub—merely palm leaves to break the wind, and more or less, keep the rain out. The children were generally naked, and cheery, pot-bellied, beggars they seemed, as they cheered the passing train, and held out their tiny hands for whatever the generously inclined cared to give. Such an existence may not be of a high order, but on the whole it is a happy one. There are no taxes, and no hunger to haunt

a broken-hearted parent as is so commonly the case in the slums of Europe.

The men in most cases were fine specimens of physical manhood. Naked to the waist, and with broad-brimmed hat on head, they worked in the morning sun with a will, and their perspiring, and shining bodies showed to fine effect their well developed muscles. We agreed to having seen strong men on the music hall stage who could not show such magnificent physique.

When we reached the high lands the nature of the vegetation changed. It was not so luxuriant, and a characteristic feature was the number of thorns. This feature I have often noticed to be associated with poor soil, and lack of rain, or water, under such climatic conditions. In Bechuanaland the most memorable thing of a monotonous journey was the apparently never-ending scene of thorns. Those who have seen the spine-covered cacti of the arid regions of the Andes, and elsewhere, will, by combining these two phases of the vegetable kingdom, and hanging an epiphyte on every other tree, which rises above the surrounding thorns, arrive at some idea of the district through which we puffed on the second stage of our journey. To complete the picture, an ants' nest, similar in appearance to a football, should be stuck here and there at favourable points on the higher trees.

The soil was white and hard looking, and gradually merged into an extremely rugged region. Great masses of gneiss rose abruptly out of the plain in a most irregular fashion, and towered in the air for hundreds of feet, forming conspicuous land-marks, which could be seen for a long distance. The means of identification was not only due to the peculiar contour of each individual mass, but to the fact that many of them had great black-looking openings at various points on their white flanks. These were undoubtedly caused by erosion—the decomposition and leaching out of the felspar in the gneiss. The Doctor, however, had an idea that they represented an ancient coast-line, and the caves were caused by the thundering waves of a long-lost sea.

Passing onwards we reached the highest point in our journey, and when descending into the valley of the Paraguassú River our speed was occasionally excessive. This was due to the undulating nature of the road-bed. The engine driver had to go full out to get over some of the rises, and to this day I have recollections of one hair-raising episode. We stood at the top of a hill (a station) until the steam was hissing from the safety valve with a whistling noise, and then we took the descent. On all previous dashes for the next rise we could see well ahead, but on this occasion there was a sharp curve near the bottom so we blundered on in blind faith that all was well. There were no air, or vacuum brakes, therefore faith was our mainstay. I stood on the platform grasping the bar with both hands, and watched the swaying of the locomotive as it rushed downhill, while each succeeding waggon and carriage see-sawed, and tugged at the couplings in their mad career. Our car was as bad as the others. I could scarcely keep my feet, and the grinding of the wheels made a deafening noise, while the rush of dust-laden air was almost blinding. Before taking the curve the whistle began screaming, what was under the circumstances, a shriek of defiance, rather than a note of warning. With a final plunge the engine disappeared round the bend, and we thundered after to find a short straight stretch, and a second curve at the bottom of the valley. We took this as we took the other, the whistle screaming all the time, and then began to climb the hill which followed. When the danger was passed, Clarke looked at me with a queer smile, and as soon as we could hear each other speaking, we discussed what would be the result of meeting an obstacle round either of the bends, and decided that it would be the end of this world for some of the victims.

Although the speed was occasionally high, as in the example given, the general average was low. I timed our speed several times and found the average for a few kilometres was thirty miles an hour, and yet taken as a whole it only amounted to a little more than half this

speed. This was due to the loss of time at the stations. We did not pass through any important towns, but it was evident that a number of the stations served fairly populous districts where agriculture was the occupation of the people. Our train was a mixed one—that is, it consisted of goods as well as passengers, and, of course, the goods meant a good deal of shunting, and taking up, and dropping waggons *en route*.

At five o'clock in the afternoon we reached the junction of Queimadinha. One branch kept along the right bank of the Paraguassú to Bandeira de Mello, and the other to a place named Machado Portello. Queimadinha (little burned place) was at one time a village of some importance, but there was trouble during an election and things became so bad that the Government sent a detachment of soldiers, who took the place by storm, killing a number of the residents. To this day the bullet holes can be seen in the door and shutters. So little hold has business on the country that this disaster ruined the place and now the most prominent object is a high gaunt cross of unpainted wood, standing within the cemetery, and guarded by a dilapidated fence little more than visible through the tangled mass of creeping vegetation.

Our destination was Machado Portello, but as the train went to Bandeira de Mello first we kept our seats and had a free ride—a ride which was getting monotonous, although this short section is one of the most pleasant of the whole journey. On the one side is the fine flowing Paraguassú River and on the other the low irregular hilly country in all its primitive wildness. The only sign of life, and civilisation, were a few goats, and these paid tribute to the ruthless iron horse. We were standing on the rear platform of the only coach which was taken on to Bandeira de Mello when the whistle began to sound and echo amongst the hills, but the speed never altered. It proved to be some goats on the line, and we ran them down, killing two. The scene was quite pathetic. A kid had been decapitated, and as we steamed away we left the poor mother gazing in wonder at her headless offspring.

Bandeira de Mello, although the direct terminus for the Diamond fields, is a small poverty-stricken place. The station and a store were the most important. Round these, and facing the river, were a number of wattle and daub huts, which had been white-washed at one time. Cultivation was very limited, but this was obviously due to the sterile nature of the soil rather than the will of the few inhabitants. It was reported to us that diamonds are occasionally found in the river in front of the hamlet, especially after a heavy flood, but there was nothing to indicate a permanent industry, or any wealth procured by the diamonds recovered under the conditions suggested.

Returning to Queimadinha we picked up the remainder of our train and continued our journey to Machado Portello, which we reached after it was dark, thus taking about twelve hours to do a little under 200 miles.

There was no provision for darkness. The only light was the smoky lamp which the station master used in moving about. As our baggage was registered through it took some time for the negro porters to have it taken out of the van, and with our assistance separated from the mass of goods in transit for the interior. When this was accomplished and our counterfoil handed over, each package had to be officially checked and passed. This was a big job. The man was no scholar, and as he peered at the hieroglyphics on the packages with the lamp in one hand and the counterfoil in the other, it was a spectacle that no hungry man should have been called upon to witness and demanded all the "paciencia" that we could command. To make matters more irritating a crowd of inquisitive rustics made the best use of their time in discussing every possible phase of our existence, and as they did not practice "the gentle art of making enemies" in considerate low-voiced phraseology, it was a miniature pandemonium that surrounded the perspiring railway agent and had Clarke and myself as the centre of attraction.

At last the ordeal was over and we passed into outer darkness as close to the heels of our guide as possible,

followed by a streaming tail of laughing negroes, who thought it a huge joke, among other things, for people going to the Diamond fields to start from Machado Portello instead of the more direct route from Bandeira de Mello. This far they had logic on their side, but then they did not know the reason for our action and, although no secret, we kept it to ourselves. It was simply due to the fact that the Doctor had the transport animals at a village conveniently near Machado Portello, whereas there was no such accommodation at the other place. Besides this, Machado Portello boasted having a hotel.

We made as direct for this hotel as the nature of the street would permit, and, in spite of repeated warnings, we had many narrow escapes of breaking our necks by stumbling into holes or over other obstacles in our way. The hotel proved to be merely an ordinary village house utilised for accommodating passing travellers. I was in no mood for closely inspecting my surroundings. My first care was to see my sleeping place. It was a small white-washed room with an earthen floor, at the back of the house. It had a crude four poster of solid hard wood, covered with straw and a nice white sheet. The pillows as usual were hard, but adorned with pretty hand-made lace. By the wall stood the only seat—a rush-bottomed chair, but the surprise of the piece was a steaming foot bath in the middle of the room. This I afterwards found to be a common practice in Brazil, and many a time I felt grateful for this attention after a long and weary ride in the sun and dust. When a bottle of native rum was added the effect was most invigorating.

The dining-room was a continuation of the lean-to which formed my room. It was narrow, and low, and bare to the rafters above with a fine display of spiders' webs. A long table occupied the centre, and a bench was placed next the main wall. On the other side chairs were used, because these could be easily removed to allow a free passage when not in use. In one corner stood a large earthen pot and a tin mug to supply the needs of thirsty travellers who wanted water.

The table was covered with a white cloth and loaded with food. It was coarse, and under ordinary circumstances far from attractive, but we had had little to eat during the day, and, therefore, anything was acceptable. There was a smoking dish of black beans, cooked with fat pork, two plates with farinha (meal made from the root of the mandioca plant), rice cooked with chopped-up fowl, a piece of roast goat, and a plate of sun-dried beef, bread, sweets and cheese. Even wine was provided—"vinho verde" from the Douro, and, of course, there was coffee and a good cigar. All this kindly attention put us in good humour, and we listened with complacency to the endless panegyric of Brazil in general, and the Diamond fields in particular. Much of the information about the Diamond fields was merely imaginary tradition and had scarcely even a foundation in fact, but anything was good enough for the "Gringo Innocente."

A plank bed assists wonderfully in getting up in the morning. I was early, but the Doctor was before me, and after a cheery good morning said he was ready for starting to bring in the mules. He wanted to enjoy the cool freshness of the morning and avoid as much as possible the heat and dust of the day. By this time our friend had joined us, and we took the hint to get some exercise under the conditions named, and at the same time get some idea of the size and appearance of the village.

We found that it consisted of a single street, about thirty-five feet wide, and ascending a gentle slope, with the railway station at the bottom. There would probably be a hundred houses, and a population of some 600 inhabitants. The houses were of a low order. At best they were adobe built, and at the worst superior wattle and daub. All were white-washed, but many were in need of a fresh coat. A large number could only boast of a doorway, while those which had windows were free from glass. This was an unknown luxury. The rooms for the most part were poorly furnished, and lack of comfort was a common feature. The bed was generally a wooden bench covered with straw or rushes. A few

stools and a minimum number of cooking and domestic utensils necessary for a simple life completed the equipment. In the better houses there were a table, a number of chairs, a cheap mirror, and occasionally an American clock on the wall, and a gaudy kerosene lamp.

While making these observations it was necessary to keep a sharp look out for pit-falls. The street had become the bed of a stream, and to check its disintegrating action walls were built here and there, or a log was fixed in position for the same purpose. At places the channel was so deep that the individuals more closely affected had made rough bridges to the space in front of their door. Luckily it was the dry season so the clayey soil was baked hard, and we had only to zig-zag and jump about as the exigencies of the case demanded. Later on I was in the village in the wet season, and had the pleasure of watching a boy trying to swim down the street. This, of course, was impossible, but he got a lot of fun out of the experiment.

No description, however, would be complete without mentioning the pigs, goats, fowls and dogs which wandered about at their own sweet will. All were lean and hungry looking, and the first-named especially were ubiquitous. They were everywhere, and a stoning only caused them to grunt, and watch with their little cunning eyes, till they got a chance to follow on. Decidedly Moses was right. The pig is an unclean animal.

Writing of scavengers reminds me that I saw very few "urubus" or vultures. This I ascribe to the presence of so many half-starved animals struggling for a precarious existence. Subsequently I came to judge in a rough way of the prosperity of a village in the interior by the number of vultures which I saw about. In this respect a small village in the State of Goyaz was easily first. It was lost to the outside world in the folds of a great green undulating country beautifully watered, and embowered in orange trees laden with golden-coloured fruit. The inhabitants did not appear to be more than fifty, and the "urubus" were certainly no less, and as tame as chickens.

CHAPTER IV

MULES ON THE TRAIL

ON the morning of the second day the Doctor arrived, riding at the head of a troop of mules. He was a striking figure, dressed in native attire—a broad-brimmed hat, poncho, and large, wide, soft, brown, riding boots, in the legs of which he carried his slippers. His spurs had rowels as large as pennies, and the "Facon" by his side was like a small sword. He was sixty-six years of age, about five-and-a-half feet high, had a pleasant face with high forehead, and a long white beard—very patriarchal looking, and commanded a great deal of respect, and even reverence. I have seen young people kiss his hand, and on one occasion was astonished to see a shop-keeper in Bahia do the same thing across the counter. This habit is common in the family circle, but the Doctor is the only man I ever saw get it irrespective of family connections.

He had been in the saddle for three hours, but appeared quite fresh, although covered with dust, which proved that the ride was a fatiguing one. The distance travelled was only three leagues—fifteen kilometres. He explained that loaded animals never travel faster than that, and in some circumstances even less. He had been successful in getting all the provisions we required for the time being, and it was only a question of re-arranging the loads and proceeding on our journey. This took longer than I expected. The beds had to be packed for use, and the boxes, and packages balanced, without the load exceeding two hundred and fifty pounds. The muleteer was not easily pleased. He said that time

spent now was time saved later on, besides making it easier for the mules from the beginning. He also overhauled the pack saddles so that the whole day was spent in these preliminary preparations.

The muleteer, or "tropeiro," to give him the Brazilian equivalent, was with us the whole time we spent in the Lençoes and Rio de Contas districts, and it is a pleasure to say that he was one of the best men of his class I have met in Brazil. He was thirty, small and black, but had many of the characteristics of a white man with a negro's good-natured simplicity. He was always clean and tidy, but he never wore boots. His spurs were tied to his naked feet with thongs of raw hide, and although the rowels were larger than crown pieces he never injured himself. His ready laugh was a cheery chorus to every joke, and so there is no wonder that we were all very fond of Benito.

His companion, our cook, was a strong contrast. He was an ebony-skinned negro, loose-jointed, and clumsy, dirty and ragged, full of mischief, and occasionally "cachaca," (native rum), but the old rascal had such a taking manner that one could never be long angry with him, and whatever his faults he was not lazy. He also remained with us throughout the trip. His name was Ceripião.

Benito and Ceripião were great friends, and those who have travelled with pack mules know how important this is, especially when it comes to loading up. They had been with the Doctor several times, and so the trio were a unit to which Clarke and myself were temporarily attached, and we soon found that our best policy was to leave them to manage things in their own way.

The mules were a poor lot, of varying age, and size. All alike were more in want of food than work, and it took some time to select riding animals. Naturally the first pick fell to the old gentleman, and with the eye of experience he soon set aside the best animal for his own use. My turn came next, but I was guided more by what Benito said than my own judgment. The same



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applied to Clarke. Benito rode a vicious brute, but it was strong and fast, and suited his purpose better than any other, and the question of comfort did not arise. He seemed to be made of whip cord. The cook had to be satisfied with a bag of bones, and as a consequence was always in the rear.

The only other animal which calls for observation was the old mare which acted as "madrinha." It carried no load, but merely trotted in front and encouraged the mules to follow. So accustomed were they to its guidance that they would not travel without it. If it went off the road every mule promptly did the same, and hence it was an advantage to have a well trained "madrinha." When they were turned out at night it was only necessary to hobble the mare, and the troop would seldom get out of sound of its bell, and stupid as mules are supposed to be, they could distinguish its timbre no matter how many bells were about. Branco proved a decent old animal, and, on the whole, did not give much trouble. Its one failing was to trot on in front for about two hundred yards and eat until the troop was at its heels and then start off again. At first this was a source of trouble, because the fresh mules were inclined to run too, and thus shift their loads, but once they settled down to the misery of their lot Branco was allowed to nibble and trot as she pleased. They plodded wearily on.

When the tedious business of loading was finished Ceripião showed the way through the village, and across the railway, with Benito in the rear, shouting all sorts of weird cries to keep the reluctant mules from straying into whatever by-paths they could find. As soon as the dust had subsided we followed, and this was the invariable rule of travel. It forced us to regulate our pace to suit the transport animals, and enabled us to see that all was in order and nothing lost, besides assuring us that we were always in touch with our beds and our food—important points. All the same it became exceedingly tiresome as the day advanced. Three miles an hour, or less, is like a funeral march, and the exposure to the full

glare and heat of a tropical sun, without a breath of moving air, was well nigh maddening to men who were out of training.

We started at seven o'clock in the morning, and at that time it was cool and fresh. Our path took us through an undulating country with but little cultivation. We only passed one "fazenda" (farmhouse) in a hollow near a reedy lagoon. After this neither water nor cultivation was seen until we reached the Paraguassú River at one o'clock. It was expected we would strike a water hole at 11 a.m., but when we reached the place it was dry, and there was nothing for it but to keep going. What made this extended march all the more trying was the fact that we were obliged to travel on an exposed track with the sun on our backs. In an ordinary bush trail the zigzagging of the path never allows any one part of the body to be long under the sun's direct rays, but in this case we had not the slightest variation for about two hours. This straight track cleared through the bush was an example of ruined enterprise. The scheme was to extend the railway from Bandeira de Mello to the Diamond fields. The money was voted to pay for the survey, which was completed, and the plans laid before the proper authorities, and even the first section was being prepared, when some political change took place, and the work was abandoned, and the money spent elsewhere.

When the river was reached we were so stiff and sore, that we could scarcely get out of the saddle, and keen as we were to find diamonds we lay for a time under the grateful shade of a tree and eased our aching bodies. Later it was delightful to paddle in the river and examine the rocks. It was about one hundred feet wide and shallow with level flaggy sandstone and but little gravel. This we examined with special interest, but as far as appearance went there was little to distinguish it from that found in many of our hill streams at home. Imagination, however, fired by the stories dinned into our ears, for the previous two days, of accidental discoveries, which

enriched their lucky finders, made us careless of appearance. Now was our chance. We competed with each other as to who was to be the lucky one to find the first glittering gem. As it happened neither of us was successful, and the call for breakfast reminded us of the fact that we were very hungry. This consisted of some bread and roast goat cut into pieces about the size of corks which it very much resembled. It was made all the drier by having been carried in a sack with farinha. This absorbed all the moisture it ever contained, and one could eat it either with a fork and knife, or with the hands as the natives did. It was washed down with water from the river. Cheese and bananas were treated in the same way. Coffee came last and was much appreciated. In fact, I became an inveterate coffee-drinker from that time forward. It seemed a necessity which I ascribe to the unsatisfying nature of the food. It was a stimulant, and responded to the craving for something better. Many times since, in thinking of this experience, I have asked myself: How much of the alcoholic excesses of the lower classes are due to a similar cause?

By 3 p.m. we were once more in the saddle, but it was anything but a cheerful company which crawled along the river bank that afternoon, and with due regard to the safety of our baggage we had a good deal of sympathy with the poor mules when they sought relief by lying down. This, however, neither helped them nor us, and added to the time spent on the road. This was of the switchback order, and none too good at that. All signs of railway preparations had been left behind, and it was now only a trail along the river bank, in which the line of least resistance was taken after the example of the water itself, consequently it curved and twisted about, seeking the easiest grades, and making detours to avoid trees, rocks, and marshy places. The country itself was far from attractive. It was of a broken, hilly nature, with poor soil covered with scrub. Not a sign of cultivation was seen, nor any evidence that the land had ever been utilised in any way beyond giving an occasional feed to

passing animals. Game there was none, and birds were few, so that if it had not been for the babbling water in its rocky bed, and pretty glimpses of light and shade on the river the ride would have been most monotonous.

This kind of thing continued until we reached the village of Tamandau, where we found some cultivation on the hillside, and a nice enclosed meadow of some four or five acres in extent near the river. The houses were of a simple character, and evidently built and owned by the people who occupied them. Each stood in its own plot, and had a rough fence round it, although the plots for the most part were neglected and the fences out of repair. Creeping vegetation, however, made a wall except where the pigs and fowls had made a way for themselves in their rooting and scraping. Exceptions to this were the two houses at the far end of the village. These were built of sun-dried bricks, white-washed, and roofed with red tiles. They were the village store and the store keeper's home. A third was being built for the same owner, and as the roof had been finished he readily gave us permission to use it for the night, while the men camped in front and the mules found splendid pasture in the meadow enclosure.

In this arrangement we were more fortunate than a friend who on one occasion made for Tamandau with the intention of sleeping there, but none could, or would give him accommodation, and he was forced to proceed, and seek the first suitable camping place he could find. Before leaving he tried to buy a chicken but the price was so unreasonable that he refused to buy. In recalling the incident he laughed, and said he had a good dinner after all, even if he had to sleep in the open. When he selected his camp he went for a stroll to stretch his legs, and when he returned he was surprised to see a fowl being roasted, and asked where it came from. "I fish for it, patron," replied the man. "How fish for it?" demanded our friend. "Well, patron, I saw how you was treated so I enticed the chickens to follow us out of the village by dropping maize, and when out of sight I

lassoed two. That is one and I have another for tomorrow."

At Tamandau my aneroid gave the elevation above sea-level as being 1,480 feet, and this place was the lowest point on the Paraguassú where working for diamonds was in progress at the time of my visit. According to report, there were four to six men taking advantage of the lowness of the river to work gravel which was usually beyond their reach. Judging by appearances, however, the remuneration was very little. One came to us with a number of small stones, a few of which I bought as specimens, and as such they were valuable as an ever present reminder of what to avoid.

A little farther up the river, but working from Tamandau as a base, was a more ambitious scheme of operations. Two canoes were moored in the middle of the river and covered with planks to form a platform. From this a man in a diving suit descended and collected the "cascalho" as the diamond bearing gravel is named, and explored all the cracks and crevices within his reach, as well as shifted all boulders he could move, so as to get at the last ounce of gravel, because in such work it is quality that pays rather than quantity. The diamond being heavier than most of the rocks associated with it sinks to the bottom layer, and is gradually carried into fissures, pot-holes, depressions, and amongst boulders. Its great hardness, too, enables it to resist the grinding and breaking up process which is continually going on, and which in time reduces the size and quantity of material directly in touch with it, and only the hardest and heaviest minerals are left as "associates." This is such a constant feature that to find such minerals is looked upon as a good sign although not a certain one, for as can be understood there may be all the proofs of a high state of concentration and still the diamond be missing. Yet it is in such places that a handful of diamonds have been found time and again, and it is this known possibility which makes diamond mining in Brazil so attractive. On one occasion the diamond contractor (João Fernandes)

fell on his knees and exclaimed: "Senhor, se tanta riqueza tem de ser a causa de minha perdição, fazei que todos estes diamonds se convertao en carvão."—Lord, so much riches will be the cause of my perdition, convert these diamonds into carbon.

The mules being in an enclosed pasture enabled us to get away early the following morning. Both Clarke and myself were so stiff and sore that we had difficulty in getting into the saddle, and once in, our faces no doubt, were a study in varying emotions. Luckily we had to climb a long hill through a wood, and that altered our position and eased our aching sores, while the forest offered some distraction. It was a decided change from the previous day, and without showing much that was new or strange, had the tendency to keep us on the alert in the hope of seeing some of its denizens. In this, however, we were disappointed and the only thing we saw out of the ordinary was the Barridugo tree—literally the big bellied tree. This name was given because of its peculiar habit of increasing in diameter some distance from the ground by a graceful curve until it is often more than twice the thickness it was below the swelling. This continues for some feet, and then the tree gradually tapers to normal thickness. Up to this point it had not a single branch, but the reddish-brown bark was liberally supplied with broad-based cone-shaped thorns. The branches were small and the foliage scanty. It gives a white, silky, cotton-like fibre, but the quantity is too limited to make it of commercial value.

About ten o'clock we crossed the river Una, and camped for breakfast. The fine bridge took me by surprise, seeing that the road was merely a bridle path. The sign of decay, however, was already apparent and the site was badly chosen—the floods were undermining the foundations. This was serious for without the bridge the ford would be an ugly one.

The Una is the largest tributary falling into the Paraguassú from the right bank. It rises near the town of Santa Isabel de Paraguassú, and after flowing south for



TRAVELLERS SEARCHING FOR DIAMONDS DURING A HALT.



some distance turns east past the village of Jequy and then north to the Paraguassú. It is said to contain diamonds, but on a subsequent occasion I explored it for some distance without arriving at a very favourable conclusion. Of course there may be diamonds near the source seeing that it at that point drains diamond-bearing lands, but I am afraid there will be no fat living for the man who ventures to spend time in prospecting in the vicinity of the bridge.

The Una, however, has other claims to fame, for it was the original way which explorers penetrated to the west. They ascended the Paraguassú, then up the Una, and continued their march along the right bank of this river until near the present village of Jequy they crossed the Sincora range, leaving behind them, as subsequent events proved, untold wealth in their feverish haste to find gold. Pushing to the west they ultimately met with success in the rich alluvial deposits of gold found in the streams which flow into the Rio de Contas and other rivers.

The crossing of the Una has a bad name for malarial fever of a dangerous character. So much did this impress the Doctor that he hurried us out of the vicinity as quickly as possible. Notwithstanding this there were two or three negro families huddled together in miserable huts as near the water as safety allowed. They had that yellowish white showing through the black which causes the negro to look so ghastly when he is ill, and undoubtedly they were far from well. But why they elected to remain in such a locality was a puzzle to me. There was no visible means of sustenance that I could see. Perhaps they had "rocas" (cultivated areas) somewhere near. If so, why they did not live on one of the excellent sites available on the hills around where the view was pleasant, and the air pure and free, was beyond my comprehension. The fact is, either from indolence or ignorance, they paid less regard to the ravages of mosquitoes than I subsequently found to be the case among the savages of the French Congo.

The next habitation we came to was Macaca Seca—dried monkey. Why it received this name did not transpire, but we found it was a thirsty place. The owner informed us that the nearest water was the Paraguassú, about three miles away. He, however, took advantage of the presence of a number of palm trees to increase his supply. The trees were low, with wide-spreading, erect leaves and caught all the rain which fell on them like a funnel. The result was that they collected quite a large quantity of water. By making an incision at the base and putting in a tap he could draw off the water when required. We used it both for washing and drinking and found it good for both purposes.

Macaca Seca was the very antithesis of the Una crossing. There it was about 1,550 feet above sea level, hot, moist, with dense clinging vegetation, and fine primeval forest, and a black, menacing, sluggish stream. Here it was 2,000 feet high and open to all the winds that blew. The original timber had all been destroyed and the secondary growth was rather scrubby. Water was scarce and the soil dry, consequently it was as salubrious as the other was the opposite. The prospect, too, was wide and pleasing, and gave us the first glimpse of the famous mountain range from which the diamonds and carbons came—appropriately named Chapada Diamantina.

Even with an elevation of 2,000 feet the heat was great, and the end of our march at a place named Mocambo produced a sigh of relief. This place was merely a general store and dwelling house attached, with a few acres of land under cultivation and an enclosed pasture. On the opposite side of the road was a public shelter. This was erected by the storekeeper for the convenience of passing travellers and his own personal benefit. It is a great advantage to be able to secure one's animals against straying, and at the same time be assured that they are getting a good feed. It follows that when such resting places are suitable they are well patronised, and the practice is general. In other words, it is a national custom

to provide shelter for travellers and transport riders, and to depend upon the revenue received from grazing and goods sold to pay for the outlay. Being free to all comers irrespective of colour or fortune, a "rancho" on a busy road often presents an animated scene. The first comer naturally selects the best location he can find, and that depends upon the nature of the weather and the state of repair in which the shelter proved to be. In wet weather, and with a good roof, he selects the centre, and in hot, dry weather he keeps to the coolest side. Each succeeding arrival does the same until sometimes the company overflows, and the surplus has to depend upon its own resources for shelter.

At Mocambo the "rancho" was merely a good tiled roof, supported on strong timbers, so that all alike had plenty of open space in front of their pitch for cooking, washing, etc. The washing, however, was confined to ourselves. The others were satisfied with washing their mouths, and hands, and some even did not trouble to do this. When we retired for the night the place was full of hammocks with men lying in them smoking and chatting, while the ground below was littered with all kinds of boxes and bundles. Half-a-dozen fires glowed in the darkness, and each showed a pot, suspended from a rough tripod, cooking the beans for the next day. This practice, like the "rancho," is a national custom amongst "tropeiros." A "sertanejo" (a native of the interior) would be lost without his black beans and farinha.

Round the fires were the cooks and "tropeiros" (muleteers). Each was lying on a raw ox-hide—used during the day in covering the loads. One-half served as a mattress, and the other half, folded over, protected them from the rain and dew. All this I had plenty of time to observe. It was my first experience of a hammock. What with the fear of falling and the unusual position of my body I was not at all happy, and it was a long time before I fell into a troubled sleep. It may reasonably be asked why I did not stick to my camp bed. The answer is because of the dirt. Ranchos, at the best, are not

clean, and at the worst simply filthy. On one occasion I came upon one in a ruined condition, but it had a small verandah. I had this cleaned out and my bed placed in position, and the fire as near as possible to keep the mosquitoes in check. Suspecting that the stirred up dust might have disturbed a colony of healthy fleas I liberally sprinkled my bed and blankets with insect powder. The men slept round the fire. When I awakened at the first streak of day not a soul was to be seen. "João, João," I shouted, and from under a cart some distance away came the answer. Antonio came from somewhere else, and José crawled from amongst the baggage where he slept as best he could.

The crowded state of our *al fresco* lodgings, and the numerous mules to marshal, and load, made us late in starting the following morning, but it did not make much difference beyond giving us a little more of the sun. As it was, it proved a more pleasant ride than those of the previous two days. The road continued similar to that described, but the forest contained finer trees, and the soil more fertile. This was demonstrated by the number of clearings where cultivation was in progress—principally maize. The procedure was simple in the extreme. The trees were felled about three or four feet from the ground and the stumps allowed to remain. All the branches were cut from the trunks, and such as could be utilised for fencing were reserved, while the remainder, and the scrub, were burned to enrich the soil. This done the land was tilled by manual labour in which the hoe was the principal implement of husbandry. Thus there was little advance on the system still practised on the West Coast of Africa, from which part of the world most of the ancestors of those we saw engaged in this occupation originally came.

As we gently descended to the Paraguassú River the forest trees were better than ever, and the gamelleira, especially, called for attention, with its great ribs buttressing the base and giving the tree a noble appearance. In spite of this increased grip of the soil some of them

had been uprooted, and one or two lay across the path. What struck us at the time as characteristic was the fact that they were allowed to block the way, and a detour made round them—an eloquent testimony to the lack of some authority to keep the road in repair, and as usual in such cases, what was everybody's business was neglected by all.

The river itself was a great change from its appearance at Tamandau. There it tumbled in a rocky bed with many a splash and gurgle, and here it was a broad sheet of beautiful white sand, with crystal-clear water flowing over it, in what appeared to be mere runnels, but, in reality, quite deep and strong streams. Coming from the shade of the forest the glare of the sun on the sand, the width of the river-bed, and the clearness of the water and the atmosphere all tended to deceive, and after floundering through some of the channels to over the girths I had some sympathy with the man in the Karroo who had been so often deceived by appearances that he was found undressing to cross quite a small stream. The mules certainly appreciated the change as they staggered through with noses and the lower side of their cargo in the water. This latter caused us some anxiety. We had no notion as to the impermeability of our boxes, and consequently joined in the shouting and splashing. Old Branco for once betrayed her trust and caused more trouble than her humble neighbours.

Looking up stream I got a telescopic view of the barren hills of Andarahy, apparently within touching distance, but as the atmosphere was so pure and clear, distances, as already mentioned, were deceptive. Down stream the level sandy conditions continued for about a mile, when a curve to the right hid the silver streak and a bank of dense green foliage formed the background.

The most interesting feature of this crossing, however, is the hidden wealth that lies under the sand. No estimate can at all approach the truth, but it is safe to put it at some fabulous sum. From the drift to where the river breaks through the mountain range, and taking

in all the flood area of the river is without doubt the richest untouched area in the whole of the Bahian Diamond fields, and probably contains more wealth in diamonds and carbons than the total amount hitherto extracted from the Chapada. This is a daring statement to make, and impossible to prove, but later on I shall have the opportunity of giving grounds for my faith in the great treasure that still remains to reward some future speculator. He will, however, require great wealth, and courage, and all the skill that engineering science can command, for it must be remembered that the Paraguassú is subject to sudden, and great floods, and at such times it descends on to the plain as an uncontrollable torrent, flooding all the low lands around. What, too, has to be reckoned with is the sand. The miners have been washing away the earth, and sand, from the high lands, for the last fifty or sixty years, and this the streams have transported to the Paraguassú, and the river has carried it through the gorge, and spread it over the level stretch we are discussing. Just how far the original surface is below the present bed is difficult to say, but it can be anything from ten to thirty feet and all barren, shifting sand. Truly a great problem which unhealthy conditions make worse, and speculative values uncertain.

Proceeding, we crossed a marsh with patches of sand, and pools of stagnant water, and having every appearance of being inundated during the wet season. This negotiated, we ascended a long red hill covered with scrub of secondary growth. Once well over the top we were face to face with one of the most wonderful changes of scenery it has been my lot to see. It was so sudden, and the demarkation so pronounced, it seemed as if nature, by one supreme effort, had taken the soil, and vegetation, and rolled them up like a scroll, and thrown them back on themselves, leaving stern sterility in the form of a grey mountain mass staring at the sun. The precipitous side exposed to our view was seamed, and fissured, to an extraordinary degree, and the beetling crags and cliffs,

with chasms and gorges, were so numerous and diverse in form, as to be quite bewildering. Here and there black streaks, and blots, indicated cavernous conditions, which the white talus immediately below, declared to be man's contribution to the general upheaval.

At the base of it all, and blending with it, was the town of Andarahy, one of the most important commercial centres in the district. It was founded on diamonds, and may be said to be maintained by carbons. Once the first settlers had cleared every crack and crevice in the hollow by the river (Andarahy), of their diamonds they built their "chocos" (rude dwellings) on the site. As their numbers increased and wealth accumulated improvements were effected till a level space large enough for a street, a small square with a few palms, a church, and a cemetery, were reclaimed from the rocky wilderness.

Descending the short hill we kept along the left bank of the river for some distance, and then without entering the town crossed the river, which at the time (beginning of November) had little water and took up our quarters in a large house standing in its own grounds and commanding a fine view down the valley. Our mules were as lucky as ourselves, as the owner of the house kindly consented to allow them to graze in his private pasture, which had been made at great expense, by carrying soil from the hill we had traversed. This was a special favour that was appreciated at the time and gladly acknowledged now.

We were in the centre of the Diamond fields, although Lençoes as the administrative capital was our destination, and where we spent most of our time in the district. Here, however, it may be useful to review our three days' march by observing that the fatigue and time spent was out of all proportion to the necessity of the case. The distance is only some forty-five miles, and we had been sixteen hours in the saddle while doing it, whereas in Rhodesia I have done as much in one day on special occasions with less fatigue to myself simply because in that country wheeled transport is considered a necessity for proper development, and every difficulty brushed

aside to enable it to be accomplished, and it could be done between Bandeira de Mello and Andarahy. The only obstacles in the way are the Una and Paraguassú, which, of course, when they are in flood would effectually, as at present in the case of the Paraguassú, stop all traffic, but during the long dry season there is nothing to prevent goods being landed on the Diamond fields at a fraction of pack mule cost.

This summing-up seems to be true, and as the matter at first appeared to me was true, but on closer acquaintance with the subject I saw that it was not such a one-sided question as a stranger might think. In the first place the special industry of the district requires no transport. Diamonds and carbons are easily carried, and as no machinery is used in getting them, there is neither export or import traffic of an industrial kind, and there only remains such things as clothing and domestic requirements to be supplied, and these per head of the population are extremely small. In spite of the wealth taken from the ground the mass of the people are poor, and even the rich are not ostentatious in their mode of living and do not travel to the coast as often as might be expected, and as for foreigners—they are few and far between. Then every one has a mule, or at least a friend has one, and so they manage to get along without spending much money in transport. But there still remains the greatest argument of all to explain why the road travelled by us was neglected and only used by pack animals—that is the utter impossibility of using wheeled traffic among the mountains, as will be convincingly demonstrated later on, and so people who never saw a macadamised road look upon what I am grumbling about as an excellent highway, and once in the saddle, or their mules loaded, a few hours more or less are nothing to them, and so the iron horse with the steel ribbons remains at Bandeira de Mello, and stray foreigners growl and become reconciled.



VALLEY OF ANDARAHY RIVER, SHOWING A PORTION OF THE TOWN
OF THE SAME NAME.



CHAPTER V

DIAMONDS AND "PALPITAS"

No one has been long in Brazil before he has seen and heard something of the lottery system of the country. In all sorts of places he meets with the vendor of tickets, and lucky numbers are forced upon him. Stories are told him of "palpitas" which have ended in bringing their fortunate recipients long odds against the shafts of adverse fortune, and he is tempted to try his luck. Like others I have ventured to stake my mite upon the chance of striking a winning number, but never met with success. It was on the Diamond fields, however, that I really realised what a "palpita" meant—that is an inspiration. This comes at odd moments and under all sorts of circumstances, but the one that seems to carry the strongest conviction is that which is impressed upon the memory during a vision of the night. No mere dream this, but a real picture of the place where the diamonds are found, and even handled by the sleeper, and the strange feature of the case is the fact that when the "palpita" is put to the test it becomes true in every particular. Of course this only happens once in a long time, but it overshadows the failures, and the "fiscadores" (prospectors) and "garimpeiros" (miners) firmly believe in the admonition which comes to them direct, if possible, but if not to some reliable acquaintance interested in the success of their work, such as mothers, wives, sisters, lovers, and the owner of the land upon which they work, and who often provides the sinews of war on a share basis. The result of this system is curious as can be imagined. Men are found busy

digging in the most unexpected places, and nothing is safe from their crow-bar, and "enxada" (hoe).

This we found out when we resumed our march from Andarahy to Lençoes. We were travelling over real diamond bearing land, barren and rugged, full of cracks and seams. In some places the sterile sandy rock was soft and crumbling, and at others, hard, and ringing under the animals' shoes, but the badness of the road, great as it was, was made infinitely worse by the endless pitfalls added to those of nature by the miners in searching for diamonds, and although it had all been worked over again and again during the previous fifty years we found an isolated miner here and there busy scraping a few handfuls of gravel from some crack or cranny which he had laboriously exposed in the hope that his "palpite" would turn out one of the cases which became true.

These remarks, while representing a general phase of mining practice, do not by any means cover the whole of the operations adopted to extract the hidden wealth of the district. Many points of attack are selected as the result of long experience in recognising what are the naturally concentrated areas, either on land or in the rivers and streams, and so my remarks, while remembered, are meant for the time being to apply to that part of the road that lies between Andarahy and Garapa. It was my first journey and consequently impressions were vivid and lasting, and the sterile, rugged, bare, rocky character of the scene, with its cacti, and stunted, almost leafless, scrub, together with the piles of rubbish, holes, and fissures, made by the miners with an utter disregard of the common rights of travellers, struck me almost with the force of a blow. It was foreign to everything I had ever conceived as being possible, and it took me some time to realise the full significance of the situation, especially in view of the fact that this encroachment on the road was in a populous district, and yet accepted by all as a legitimate procedure. Imagine, if you can, travelling between two provincial towns in Britain, and at every turn and odd place, here and there, finding a

man engaged, without any authority, in digging a hole, or making a trench, and throwing the material extracted where it was most convenient to himself, while you got past as best you could, and you have some idea of the extraordinary practice in the Bahian Diamond fields. Or if you happen to be a Londoner of a cynical turn of mind you can recall: "Road under repair." Multiply it indefinitely, take away the protecting barriers, and the warning light, and you have a fairly accurate representation of our ride to Lençoes.

On such a road it was impossible for one to complain of monotony, and however tantalising to a man in a hurry, it was full of interest, and we had reached the end of our march for the day, at the hamlet of Garapa, before we were tired of the novelty. Garapa had nothing to recommend it but beautiful water. The stream rose in the hills above, and lost itself in the swamp below on its way to the San Antonio River, a tributary of the Paraguassú. In its higher reaches it was famous for diamonds, and at the village the *débris* of the long-continued washing was in evidence and made a splendid smooth bottom for bathing.

Our accommodation was in a somewhat dilapidated erection without doors used for making farinha. This was a primitive arrangement. It merely consisted of a large home-made wooden wheel, with two handles for turning it, and geared by a rope to a roller about eight inches in diameter containing serrated horizontal strips of iron. The turning of the large wheel caused this to rotate at a high velocity, and ground the roots of the mandioca plant held against it to a coarse meal-like condition. Collected and pressed, it was put into a shallow copper pan over a slow fire, and kept in motion until thoroughly dry, when it was ready for use. The reason for this process is the volatile poison the root of the mandioca plant contains in a state of nature.

Apart from affording shelter, it was far from attractive, and each of us soon found an excuse for leaving old Ceripião in charge. My object was to do some exploration. On the west was a red hill with a portion of the

subsoil at the base near the road exposed. This had been done by some miners in testing its value. The amount of gravel was very limited and not at all promising-looking, besides it had a heavy overburden and was some distance from water. Of course where values warrant expenditure in making a water course, this is made, or where the quantity of "cascalho" is limited, it is classified and the concentrates carried to the water. At Garapa, however, the red hill evidently did not respond to either of these alternatives and was abandoned.

Seeing a path running diagonally up the hill, through the wood, I followed it and unexpectedly came upon a rude dwelling perched on the brink of an escarpment overlooking the barren, rugged country to the south-west, and immediately above the stream. The scene was impressive. The sun was low on the horizon and showing a most irregular, rugged outline of the intervening mountains, and toning and shading into many tints the near fore-ground. Getting from my airy perch I descended towards the stream, and found a man who proved to be the leader of a gang of miners. He took me to their "garimpo"—the place where they were working. I had never seen anything quite the same, although it had some of the elements that distinguish the open-casts of some of the copper mines of Spain, and Kimberley in South Africa, without being so impressive as to size, yet it appealed to my imagination in a way they never did. The area was originally a rugged, gash-riven sandstone hill. Into the gashes, or cracks, the miners began to explore in a small way, and finding that they contained "cascalho" they persevered and to their surprise the hard beds of sandstone gave place to the same substance so soft that they could cut it with their crowbars. Thus the work continued expanding, and as experience gave them courage, and values were high, so they descended amongst the cracks and horizontal seams until it had reached the stage of development which I saw.

It was about 150 to 200 feet in diameter and like a

great caldron filled with house-like masses of rock lying at all angles and in all positions. Seeing two boys sitting some thirty or forty feet below I asked the man if there were any miners at work. He replied in the affirmative, and if I would follow him he would show me where they were. Going along the edge of the working he began to jump like a goat from rock to rock, and ever in a downward direction. He never looked back, and I followed as best I could. Suddenly he disappeared. On getting to the place I heard the roar of water, and saw him crawling into a dark inclined hole. I followed. The roaring sound of the water increased, and presently a glimmer of light from the opposite end of the tunnel revealed a sheet of water about four feet wide falling somewhere into the unknown darkness below. On reaching the place, my guide jumped across and for once condescended to turn and warn me that the chasm into which the water was falling was thirty palmas (a palma is equal to eight inches), and once falling in, hope of rescue was gone. Sliding down the jutting incline I jumped across, and got into a cavern which was comparatively open to the light of day, so that I could see my surroundings. It was about thirty-five feet in diameter. To my right, and underneath, were two horizontal layers which had been extracted and the roof supported by pillars of stone. To my left, and at a much greater depth, I saw some men at work. These were distributed amongst the crevices in a most bewildering manner and foreign to all the canons of recognised mining, and surrounded by dangers so glaringly apparent, that I asked the guide if accidents did not occur from subsidence, and how the men escaped from such narrow, irregular openings—drives or galleries they could not be called. He replied that long experience had made the men wonderfully expert in recognising the first signs of danger, and as a consequence accidents were few, but when one did occur there was nothing for it but to await with what patience they could command until the rocks settled, and then attempt to rescue their buried companion, and some-

times he was found alive, and there was rejoicing, but in the other case he was buried, if found, and in any case the work was continued.

Proceeding, I soon found myself faced with a dangerous jump—dangerous with boots. It was a wide and deep hole, the bottom of which I could not see, but I could hear the water. There was no time to hesitate. My guide was round a corner and out of sight. When I did see him he was climbing the face of the cliff by means of sticks stuck in the cracks, and all he did when I came up was to warn me not to touch a particular boulder. Whether this was for my own safety, or that of the men below, and whom I could hear in the vicinity, I could not make out. I piloted it safely, however, only to be again confronted with another jump. It is tedious to repeat my acrobatic feats in getting to the region of old Sol; besides I had more than a suspicion that the difficulties were made as great as possible for my special benefit, therefore it can be imagined that I was glad when I found myself safely on the river bank. Here he showed me how they had blasted a channel to lower the bed of the stream, and prevent the water entering their workings. Somewhat higher up they had their regular "rebaixo" (inlet) to convey the water to the interior where I saw it, and where washing was actually done—that is the recovery of the diamonds. This is done in the "batea," a wooden dish varying in size but uniform in shape, and may be described as a broad-based cone when inverted, about eight inches deep, and two feet in diameter. Ordinary rocks are about 2.5 in specific gravity, whereas diamonds are 3.5, and this difference means that by careful manipulation the diamonds descend to the bottom while the worthless material is washed away. This sounds simple enough, but it takes long experience and much practice to be an expert diamond washer, and, in fact, some men never acquire the art with sufficient dexterity to satisfy their associates, and this regulates their standing in the "turma" (gang of men—in this case, miners).

When I got back to the farinha shed the Doctor and Clarke were busy slinging a hammock for the latter. The position, while suitable enough, was rather limited, and Clarke was drawing the Doctor's attention to this fact, but the solemn response was given that security was the first consideration in fixing a hammock. As I was satisfied with *terra firma* and my camp bed I took pleasure in teasing my friend by suggesting he was trying to turn himself into a bicycle wheel as he ruefully curled up in his swinging dormitory.

The laugh, however, was against me during the night. We were invaded by all the pigs in Garapa, and no amount of shouting or throwing things at them was any use. They simply would not go away, and at last I was forced to get up and hunt them and barricade the opening. As I groped about in the dark, half asleep, seeking for something to accomplish my object I fell over more than one obstacle, and my expressions were far from complimentary. If it had been in my power the fate of the Gaderene swine would have been the fate of the Garapa pigs that night. As it was, there were only protesting grunts, and ostentatious snores from the hammock, while the Doctor gently advised me not to get hurt—kind man. I wanted to throw something at his head but thought it was better to get to sleep and let them enjoy the joke. My turn would come later, but as it happened, old Ceripião made a palpable hit in a sly reference to my night's adventure, by asking if I would like a bit of pork for breakfast.

When we resumed our march there were neither signs of Diamond fields nor miners. The change was remarkable. On our left were the forest-clad red hills already mentioned, while on our right was a beautiful green undulating pasture sloping into the valley where the Garapa stream was lost in the swamp. As we advanced this swamp became a reedy lagoon, and away beyond it the land rose and fell in low scrub-covered hills, till finally the horizon merged into the cloudless sky, somewhere in the vicinity of the San Antonio River.

The road was good and fenced in—one of the few examples of the kind found in the interior of the State of Bahia. Being early, it was comparatively cool, and we enjoyed listening to the Doctor's observations on objects of interest which we saw as we rode along. Coming to a Cashew tree he asked Benito to get some of the fruit. When I saw it I was reminded of the well-recognised habit of the Chinaman to do things exactly opposite to European custom. The Cashew is the Chinaman in the botanical world. The kernel, nut, or seed, is on the outside of the fruit, and looks like a haricot bean hanging from the end of a large plum. The fruit is somewhat sweet and astringent, and, being fleshy and having abundant juice, is an excellent thing for quenching the thirst. Beyond this I cannot go. I did not like it. But it is reported that the Goanese extract from it a neat brandy, and in Minas Geraes it is made into sherbets, and from the kernel a bitter gum is used by bookbinders to protect their work from worms.

When we got to the end of the red hills the road turned to the left, and almost immediately we reached the stream Roncador (snorer, noisy fellow), well named because of the noise it makes in tumbling down the hills and through the gorge. Its rapid fall was taken advantage of to work a saw-mill. It was working when we passed, and was the first example of mechanical industry seen since leaving the railway. It was a case of working under difficulties because there was no wheeled transport. Everything had to be carried by mules, or hauled from the wood on a rude sledge. Once the logs were cut up it was easier to apportion the load, but even then it meant a terrible buffeting for the poor animals, as they struggled along a bad road, over the hills, where trailing boards, hanging over their heads, made them reel and stagger, when they took a quick turn, or met some obstacle in their path.

We were again on the eastern flank of the Diamond fields, but there was no escarpment. The natural inclination of the stratification rose to the west, and dipped under the valley where we were travelling without a break,

but otherwise the features were the same as those already given, only it may be added that here, for the first time, samples of the famous conglomerate made its appearance.

Crossing the Roncador we found that the road divided. One branch kept along the foot of the hills while the other crossed the swampy valley, and the São José River. The former was the one used during the wet season when the latter was flooded, but in the dry season the preference was given to the latter as the better road.

The São José River is about sixty feet wide with a sandy bottom, and had a limited flow of turbid water—a sure sign that miners were at work somewhere above the crossing. This, however, proved not to be in the river itself, but came from several tributaries which rose in the hills to the west. There is no doubt about the São José containing diamonds and carbons. The questions are: "What is the value? What the cost of extracting them?" Like the Paraguassú below Andarahy it is a difficult proposition, although not to the same extent as the main river. The rise and fall is not so great, nor sudden, or rapid, but the quantity of sand to be handled is very great. All the land for miles has been washed away, and this has raised the bed of the São José several feet above its original level, and till this has been disposed of there is no hope of success. The river, too, at this part of its course is very sluggish and a short distance farther on it loses itself in the reedy lagoon, and any carrying power it ever had is entirely lost, and thus any scheme for disposing of the sand cannot rely upon the river to do the transporting unless in time of flood, and then working is difficult.

At the time of our visit a number of concessions were taken up. These extended in one case from the village of Marco to beyond Roncador—a length of eighteen kilometres by six wide. Others continued up stream to beyond the Lençoes River, but the most ambitious scheme was the first-named. The idea was to control the whole river, and thus be able to carry out whatever operations were decided upon without the interference of

local "turmas." The necessary capital was obtained and after our departure work commenced. The method adopted was dredging, and it was hoped that by piling the banks, and throwing the sand behind the piles, and draining the water, it would not further impede their work—that is, they adopted a modified form of the system in use on the Suez Canal. What would have been the ultimate result is difficult to say, because the engineer in charge died before anything positive had been accomplished. After his death the work was stopped, and as far as I know it has never been restarted.

After crossing the São José we got into a wood of stunted trees. The land has the same geological position as the red hills already described, although from this point to the north, between the São José and San Antonio rivers, it never rises to the same height, and being without water was neglected both by cultivators and diamond workers. It is doubtful, however, if the latter would have met with any success even with water. It is certain that it had been tested at various places and found wanting.

The road kept along the left bank of the river till we again crossed it near the village of Mosquito. Before we did so, however, we met a mounted policeman, or soldier, dragging a prisoner behind him. It must have been a painful experience for the prisoner and one would imagine the crime must have been something very bad to merit such treatment. In any case it was in keeping with the story of a friend. On one occasion he was travelling in the Sertão with a young military officer, who was on his way with a company of soldiers, to capture some dangerous robbers. When they parted each wished the other success. Time passed, and my friend forgot the incident, but meeting the officer reminded him, and he asked how the episode ended. The officer laughed and said it was a complete success.

"So you captured them."

"Yes, we captured them."

"What was their sentence?"

"They got no sentence."

"How was that?"

"Well," continued the officer, "they were betrayed by one of their companions and we quietly surrounded them during the night, and, as soon as it was light, we shot them where they lay."

"Was that not rather an unusual procedure?"

"Yes, of course it was, but they got nothing more than they deserved. They had murdered people without the least scruple, and I was not going to run the risk of losing them and having some of my men shot, besides it saved the expense of a trial."

Such was crime and justice in the "Sertão."

The upper drift on the river was similar to the lower one, and the diamond range was the same as at Roncador, only we had passed two streams which had carved a way for themselves by rugged gorges through the mountain mass. These were the Calderão and Capavary, and while in themselves of no great size or importance had been famous in days gone by as the home of great diamond wealth. At the time of our visit, however, they were completely neglected, or only worked spasmodically, by some roving "garimpeiro," who had a "palpite" that he would find some valuable gems at the place indicated in his, or his friend's dream; and it was in crawling into and extracting thin seams of gravel from one of these streams that two men met with a serious accident while we were in the district.

Mosquito is the name of a stream that descends from the west, and also a small scattered village situated about two hundred yards from the river and in surroundings as barren as the Red Sea region, although within sight of the forest-clad hill on the opposite side of the river. The bare grey hills had receded somewhat at this point and left an alluvial plain varying in width from a few hundred yards to a mile. At Mosquito it was full of trenches, and holes, and heaps of sand, with water laid on wherever possible. It was here, too, that I first saw a "cata" being made—that is, a pond-like excavation varying in size and depth according to the nature of the

ground and the number of men engaged in the work, but about twenty feet square is a common average. This would be the size of the one the men were engaged in sinking when we passed. It was about ten feet deep, and was evidently a difficult proposition. The sand contained a good deal of water, and consequently very unstable, and the problem these unlearned men had to solve was to take out the sand that actually corresponded with their excavation. This, of course, was impossible, but they had been successful in reducing it to a minimum by rough timbering, and packing with grass. (How they managed to support sides, twenty feet wide, in running sand, without internal supports, I leave to my mining readers to solve for themselves.)

We did not hear the result of their labour. As a general rule something is found in the locality lying between the mountains and the river but no one can foretell the actual value, and thus it is a speculation at the best, but in some cases a highly satisfactory one. By such a system, however, it can be understood the area actually worked is very small with reference to the whole, and does not provide sufficient data to arrive at any satisfactory calculation. In any case the miners are too secretive to enable one to get at the facts, and so time, and work does not improve the prospect of ever being able to arrive at approximate values to be found in any given area, and hence work whether on a large, or small scale, must remain blind speculation.

The Mosquito after leaving the hills spreads out like a fan and finds its way to the São José by innumerable tiny streams—that is, in the dry season. Between this place and the village of Marco there was no work corresponding to that just described. In fact, the land seemed to be virgin, and was fenced in and planted with grass, and was one of the few pastures within a reasonable distance of the capital. As a result of this scarcity of food animals were expensive to keep. We paid as much as two shillings per day for each mule, and as we had eleven to provide for, it soon mounted up, and we were forced to

send them farther afield. Meagre as this acreage of grazing land was, we soon learned that it too would have vanished, had it not been buried beneath an excessive depth of running sand. As it was it was encroached on all sides until it looked like an oasis in a desert.

The village of Marco consisted of two rows of houses—one on each side of the road—and a few huts with gardens containing some trees, and banana plants, which later on provided us with fruit which was much appreciated. There was also a "rancho" which we utilised while we had breakfast. Like most of such places it was far from clean, and although we used ox-hides for carpets, I became the victim of a "*pulex penetrans*." As I was ignorant of the very existence of such a parasite, I was not aware that it had selected me until the affected part became inflamed and painful, and then it was too late to prevent a wound, and the mark remains to this day as a reminder of Marco.

No sooner had we resumed our journey than we got into a wilderness of *débris* heaps, and holes, and "regas" (water-courses) crossing the road every few yards. On our right beyond the river was the forest-clad red hills, but from the river, and away to our left as far as we could see the land was stripped bare of soil, and showing up glaring colours of white, yellow, red, and brown, according to the nature of the decomposing rocks that had been exposed during the process of washing away the soil to get at the diamonds. This kind of thing continued until we reached the Ribeirão do Inferno. This is one of the largest tributaries of the São José, and has a fall of 1,000 feet in less than three miles, and in the wet season is subject to heavy floods, and even in the longest droughts it is never dry. In days gone by, like the streams already discussed, only more so, it had proved rich in diamonds, and from the very configuration of the land is likely to contain diamonds still, only they are not easily got at, and to recover them will require more capital and skill than has hitherto been brought to bear on the subject.

After crossing the Ribeirão do Inferno the hills approached nearer the river (São José) and thus the valley

became narrower. It was fenced in and under grass. The hill-side, however, was covered with scrub, and apart from evidence that it had been tested, here and there, for diamonds, nothing was done to utilise it. This was all the more remarkable to a stranger seeing it was so near the town, and the demand for produce of all kinds so great. The reason given, however, was that it could not be irrigated, and during the long dry season became so hard and burned up that nothing would grow upon it.

But what struck me more than anything else was the suspicious trace of fetish worship. This idea originated in seeing a tree with small pieces of cheap calico hanging from the branches. At first glance it appeared to be the work of children, but a closer inspection gave a different impression, and when I asked the Doctor why it was done he said it was for luck. This, no doubt, was the case; but why? I am sure those who adopted this method of adding to their luck did not know the origin of their action. They were simple, ignorant folk, who had never travelled far from their natal place, and were entirely influenced by the manners, and customs, of their ancestors, and these for the most part came from the West Coast of Africa, where fetish worship is still practised. This was illustrated to me when travelling in the French Congo. We had spent the better part of twenty-four hours in a dug-out canoe in traversing the great swamps which border the coast. Coming to a dry place I wanted to camp for the night, but the men, although very tired, refused to do so, and my remonstrance was disregarded. The interpreter drew my attention to a number of rags hanging from wands stuck in the ground. This, he said, was a signal that none dared to neglect, and all were forced to continue to the next dry place. I wanted to know the meaning, and what danger the men anticipated from disobeying the sign, but this he refused to disclose, and all that was left for me to do was to poke them in the ribs, from time to time, to keep them awake while they paddled throughout what seemed an endless night—as dark as their minds.

CHAPTER VI

A DIAMOND CAPITAL

LENÇOES is a survival of the fittest. Wild as the surroundings are, it has inherent elements that raised it to the pre-eminent position of administrative centre of the whole district, in competition with its rivals. All alike were originally the temporary working abode of hardy adventurers who had no love for any particular locality. Their final decision rested upon the sites where their efforts met with the greatest success, and it is remarkable that in each case the physical features are the same—that is good water, and a more or less great area of naturally concentrated diamond bearing land. In other words, a basin, or basins, which had retained all the valuable contents of the rocks, which had at one time occupied the denuded area, and also had a valuable supply of good water. In this respect Lençoes takes the premier place, and so in justice, it remains the capital of the Diamond fields, and has the largest population.

This comparative explanation applies to the Diamond fields only, and, as can be gathered from the descriptions already given, does not mean any great attraction, or suitability for an urban population, and certainly far from what is usually associated with towns of recent growth. It originated subsequent to the wild rush and scramble, that occurred when diamonds were discovered in 1844. The first inhabitants were mostly men of coloured blood with no idea how a town should be laid out. They were there for diamonds, and placed their rude shelters in the most convenient place for their purpose, but the values

proving to be more or less permanent the nature of their habitations improved, and finally the makings of a town emerged from the surrounding chaos.

It is situated on the right bank of the Lençoes River, within a mile of its junction with the São José, a tributary of the San Antonio, which is an affluent of the Paraguassú. The Lençoes is similar to those already mentioned, and is nothing more than a mountain torrent of no great size, but subject to heavy floods in the wet season. The main thing, however, is the fact that it never dries up, and the people can always depend upon their domestic supply. If it differs at all from the other hill streams, it is that instead of cutting through the mountain, as they have done, it flows through a rugged hollow where the range has been extensively denuded. If one can imagine an old enamelled basin, rather more than a mile in diameter, lying on the side of a rubbish heap, in such a way that the track of the wheel (in this case the river), which destroyed it, runs from the highest to the lowest edge, with Lençoes, and its 6,000 inhabitants, resting there at a height of about 1,800 feet above sea level, while the upper rim is tilted to an elevation of some 3,500 feet, one would have a fairly good representation of the configuration of the land and position of the town. To complete the picture let him stand on the lower rim, with his back to the rising sun, and should the white "neblina" (mist) permit he would see nothing but naked rock and stunted scrub all round to the sky-line without an acre of level ground, but on all sides "hills and knolls, confusedly hurled scenes of an earlier world."

A more unpromising site for a town is difficult to imagine, and yet time and labour have accomplished so much that the first impression is favourable. We approached it up a hill path where the mules' iron-shod feet rang upon the living rock, and after passing some inferior houses suddenly emerged on to the public square. This is not large, and where the ordinary rock formation is not exposed is paved with rough cobble stones. Round the four sides are white-washed adobe-built houses.

Some are two stories, but the majority are single floors only. On the ground floor are the principal shops of the town, and where the commerce of the district is transacted, while the upper story is the home of the merchant, and through the jalousies we could see the fair members of the family peeping at us as we passed. Indeed, the clattering noise of our troop over the ill-paved streets of the silent town brought crowds to stare at us. Strangers were few, and evidently work was not pressing, so all wanted to see the Englishmen.

There were no hotels, or public accommodation of any kind, therefore we were pleased when one of the leading citizens, who was living out of town, kindly consented to put his house at our disposal. It was situated near the end of the principal street and at right angles to the river where it is crossed by a stone bridge—the only one I can recall seeing during the whole of our tour. The river, however, curved round, and was quite near the house, so that it was convenient in many ways. We could have a bath when we wanted, and wander amongst the rocks at our pleasure without being subjected to the endless inquisition of our neighbours. This is no light matter, and it takes patience and tact to shake off an expert heckler. It is the custom of the country, and no harm is meant by the inordinate curiosity shown in attempting to learn a stranger's business. As a proof of this turn the tables, and they will tell you all they know, and hence one can understand their offence at rudeness, and so if anyone wants to remain any length of time in Lençoes he must be careful to avoid this mistake. I found it better to meet them half-way, and gain their confidence by asking all sorts of kindly questions, and telling them about the greatness of their country, and the wonders of Rio de Janeiro, and Bahia. They are exceedingly patriotic, and nothing upsets them more than to make your own country appear greater than theirs. If you do they will never really forgive you. Learning this I utilised the knowledge to the best advantage by making things pleasant all round.

Our temporary abode was quite large and enabled us to have the use of three rooms and the kitchen without intruding on the more private part of the home. The house had been shut up for some time and so dust, accelerated by the glassless windows, had collected on the floor, etc. We thought nothing of this, and having selected a room I promised myself a good sleep on a bed with spotless linen, and retired early for this purpose. But I had only slept about an hour when I awakened from a dream that I was being seriously attacked by jumping parasites. Amused at the idea I turned over and was soon asleep again, but only to be once more disturbed with the same sensation. Striking a light I was horrified to see the white bed-clothes black with rapid moving spots, which plainly declared the nature of the enemy. I fled into Clarke's room only to be laughed at. Nothing, however, would induce me to return to my haunted chamber, and I spent the remainder of the night on a deck chair. The night following Clarke came in for a vigorous attack, and it was my turn to laugh while he danced about in real fighting trim, and had his enemies been open to his fistal attack their punishment would have fitted the crime. As it was when morning came he threw his bed into the street with the remark: "Go and have a bath." Meanwhile the old gentleman went about his business quite unconcerned, and his freedom from annoyance only added to our irritation, and the second day Clarke spent a considerable time in catching his nimble visitors, and putting them in the Doctor's bed. Next morning we expected to find him as irritable as ourselves, but nothing of the kind. He answered our inquiries by saying he got up and shook his sheet and the trouble ended. After that there was nothing more to be done but wait with patience till another house was found. We got out of the difficulty, however, to our surprise, by hanging our hammocks—that is, sleeping in them—and putting our blankets in the sun all day.

This nocturnal disturbance had the advantage of making us familiar with the scenes, and sounds, of the

town by night. From being silent as a cemetery during the day, it became quite animated towards sunset, and the noises continued with diminishing volume till midnight. Even after that a few stragglers were heard going home from some party or other, but generally associated with gambling. This is a serious failing amongst the people, and is responsible for much of the misery, and quarrelling that is such a common feature. No doubt the active agent in these brawls is the native rum, which is exceedingly cheap, and consumed in great quantities, and when a man gets a cargo on board he is ready for anything from pitch and toss to murder. So much is this recognised by the authorities that they do not allow men to carry arms in the town, and, as a consequence, on market days, all the houses on the main roads, at the entrance to the town, are so many small arsenals with the accumulated arms of the travellers.

Notwithstanding this precaution, blood-letting is no uncommon occurrence. I remember Benito coming in one morning and informing us that a man named Celestino, a negro with a dash of Indian blood, had killed two men and had fled to the hills. This is the usual practice, and as diamonds are found all over the district, the criminal seeks the wildest, and most inaccessible places, so that the authorities are taken at a disadvantage, and knowing that they may as well look for the proverbial needle do not attempt to capture the fugitive, but quietly bide their time. Indeed, after a period if the man is discreet, and the victim has no powerful friends he can return and resume his ordinary life. In any case he is in no danger as long as he remains in his mountain fastness, and has friends to sell his diamonds and buy provisions for him.

Celestino did not observe this precaution, and appeared one afternoon in the village of Marco under the influence of alcohol. Entering a small shop he saw an old double-barrelled pistol on a shelf behind the counter. Jumping the counter he secured the weapon, and was coming out swearing vengeance on his enemies, when he was pluckily

pinioned by the shop-keeper's wife, a powerful negress. Shouting for help she kept her hold and prevented him from shooting till other women came to her assistance. The Doctor who saw the whole incident assured me that it was an exciting moment while the women disarmed and trussed up the ruffian.

Meanwhile some men appeared on the scene, and a messenger was sent to Lençoes to inform the police. Celestino was forced to his feet, and as he refused to walk, he was pricked in no gentle manner, with their needle-pointed knives. This made him hop along with unequal jerks and curses, amidst the laughter of the spectators. By and by they were met by the police, four men under a sergeant, who took over the prisoner, and in doing so promptly turned him on his face and frog-marched him into Lençoes. That was the last we heard of Celestino.

It does not follow from the above that all violent deaths are murders, and all men who are forced to take a hurried journey for their health are murderers in the true sense of the term, and this fact is observed and due allowance made. I was once in a village in another part of Brazil which was notorious for being the home of a number of fugitives from the law. One of these was a careless-looking, laughing negro, whom no one would have suspected of anything more serious than stealing hens, and yet his history was no ordinary one. In a drunken quarrel he had the misfortune to kill his companion, and only saved his skin by a hurried flight. In the course of this he came to a rude hut in a thinly-populated region, and found an old woman weeping bitterly. Inquiring the cause, he was informed that two men had carried away her grand-daughter. "All right, mother," he said, "give me a cup of coffee and I will go after them and bring back your child."

Getting what he wanted, he set spurs to his jaded horse and in less than two hours he came up with the ravagers. Pretending he was the girl's father he pleaded with them to restore his child for her grandmother's sake. He played his part so well that they were completely

taken off their guard, and beyond threatening to shoot him if he did not clear out took no action, but he, while talking, was gradually getting them in line. When he attained his object he came off his horse as if to go on his knees, but no sooner had he touched ground when bang went his double-barrelled pistol, and the two men tumbled out of their saddles. So did the girl, but she, being smaller was not touched, and promptly climbed up behind her deliverer, leaving the wounded men to recover themselves and their mules as best they could.

This adventure soon spread, and appealed to the sentiment of the people so much that the negro was received as a friend, and even warned by the local limb of the law when the central authorities were on the move. Needless to say he was never arrested.

The man who gave me these details was no common character. He was a local judge, and related either directly or indirectly with nearly all the families in the district. But his special claim to distinction lies in the fact that when a young man he was outlawed for having killed a man in what he considered fair fight. His own account of the affair is interesting. He was the leader of some clandestine diamond miners, and the authorities were determined to catch him and were watching his every movement with that object in view. Notwithstanding this, he ventured one evening to a neighbouring village to pay his compliments to the village beauty. Leaving his horse hidden in some bushes he spent a pleasant evening in the girl's company, but on leaving a rival accused him of dishonourable conduct. Words led to blows, and the man fell mortally wounded. Our Don Juan ran to get his horse, and make his escape, but he was suddenly surrounded by the diamond guards who had been lying in wait for him, and led a captive to an empty house. Here he was chained by the neck to a post and left to his own reflections.

After a time realising that there was no guard set to watch his movements he quietly began to liberate himself, and finally succeeded in loosing the chain from the

post. This accomplished the mud-built walls offered little resistance, and once clear of the building he rolled the chain round his neck and ran to the river which happened to be in flood. Plunging in, he tried to swim, but this was a difficult task as the chain weighed him down, and in the struggle became unwound and caught in the rocks making him a half submerged prisoner in the midst of the foaming flood. Being accustomed to dive in search of diamonds he kept his presence of mind, went under and freed the chain, rolled it round his neck once more, and succeeded in reaching the opposite bank in an exhausted condition. Here he was found by a friend who knocked off the chain and assisted him to escape, and for over twenty years he managed to keep out of the clutches of the law. Indeed, in the interval so many changes, both local and national, had taken place that he and his alleged crime were forgotten. All the same he took advantage of the revolution which drove Dom Pedro from the country to receive a free pardon, and, as stated, he was an influential man and a judge amongst his neighbours when I met him.

Coming back to Lençoes, I soon saw that it was a town which had passed its meridian, or at least was never likely to increase, and was actually in a stagnant condition, with very little intercourse with the outside world. There was neither telegraph nor telephone, and the post only came once every fifth day, and even then the mail was so limited that a man could carry it without being heavily laden. The only papers which reached the town came from the coast, and, of course, contained no local news. Hence this was carried from gossip to gossip as time and opportunity occurred. For this reason strangers were welcome, and all were great talkers. The least item of news was of interest to them, and every possible phase was discussed again and again in a vocabulary that was extremely limited, so that with all their eloquence their conversation was monotonous, and often a weariness to the flesh. This was especially the case when for the sake of courtesy one was forced to take part in an evening

"tertulia"—that is, a friendly gathering for the purpose of conversation.

From sunset till late in the night groups could be seen in every street engaged in talking. This often degenerated into a loud and angry discussion on the one hand and a laughing chorus on the other, but in either case the cause of the excited feelings was generally of such a trifling nature as to cause surprise and amusement. I remember on one occasion being solemnly assured that if I went to a place named, I would see the sea coming to the surface to breathe. Pursuing the subject, I was astonished to find that the land overlaid the ocean, and wherever water came bubbling out of the ground it was a sure sign that it was trying to escape. Another instance of original thinking was when a man explained the presence of diamonds as being due to the breaking up of a great diamond sheet, which after a long time became scattered all over Brazil for the purpose of providing the poor with money to buy food.

These remarks show that while the people are ignorant they are interesting and a study in themselves. This arises not only from their environment but is in a great measure due to their complex nature. They are a compound of Portuguese, Indian, and negro, with the latter predominating amongst the lower classes. The general result is the production of many peculiar forms of face and features, but on the whole they are a people who can stand great fatigue, and live on the verge of starvation with a cheerfulness that commands the greatest respect. To many bread is an unknown luxury, and coffee only available once in a while. Tea is considered a medicine and a luxury at that. The place of these refreshing beverages is filled by taking sugar and water especially among young children. Milk is extremely scarce and dear in proportion. Even among the better class food was of an inferior order. Fresh meat could only be obtained twice a week, and was hard and stringy at that. Carne seca (sun dried meat) was always to be had, but not always good. I have seen the maggots scraped off

it before being used. Fresh fish I never saw, and the salted variety was very inferior. That which came from the San Francisco River was far from tempting. It was surubim salted and cured like cod, but not nearly so good. The salt used in curing was a native production, and not being properly purified, contained traces of deleterious elements, and consequently had disastrous effects when eaten in any great quantity. Fruit, too, was scarce and of poor quality, due to the long distances which it was carried on mules' backs. And thus, in reviewing the whole food supply, it will be seen that it was neither abundant nor cheap, and forced the poorer people to economise, and be satisfied with the very limits which nature demanded. Indeed some never got more than one meal a day, and this generally consisted of black beans and farinha with a morsel of fat pork, and when possible a piece of carne seca.

The sterile nature of the district explains the scarcity and dearness of food, while the occupation of the men gives a reason for the poverty. Diamond mining in Brazil is no certain and regular source of income. Weeks often elapse without a single carat being found, with the result that the men are forced to fall back upon the local tradesman, who supplies the bare necessities of life on the understanding that he is repaid out of the first diamonds found, and receives the right to buy such diamonds at a price which allows him a good profit. Under such a system it can be seen the miners may pay dearly for the accommodation they receive in their extremity. Sometimes they work for a "Patrão" who owns the "garimpa" and provides the sinews of war under a contract whereby he receives from twenty to twenty-five per cent. of all the diamonds and carbons found, and generally the right to purchase the whole of the output. In this case the wolf is kept from the door, but the same uncertainty as to when and where they will find diamonds, and receive cash, produces a demoralising effect. After a period of semi-starvation, it is not surprising that a stroke of luck awakens slumbering appetites, and they forget their

privations in having a good time. Unfortunately, this often includes drinking and gambling which soon reduces them to their former indigent condition.

As an example I may mention the case of an old man and his wife whom I knew in Marco. The old man had been a slave and was a fine specimen of humanity, standing over six feet high, and as straight as a ramrod, although his hair was as white as snow. He never passed me without stopping to salute and this was such an unusual thing on the Diamond fields that I took special notice of him. His wife was not much to look at and dressed in rags. All the same he was proud of her and called her his mining assistant, and declared that there were few equal to her, and she certainly was worthy of his praise. She worked late and early and seemed as good a miner as he was. All day long she could be seen with her clothes tucked up out of the water and using her hoe with a dexterity that denoted long practice. This went on day after day without the least reward, still the old people persevered and at last fortune came their way. They found a diamond of the first water weighing six carats, but, unfortunately, in finding the diamond they lost their character. They went on the spree and never did a stroke of work until all their money was gone.

Such being the mode of life and work it is evident that there could be little comfort in the home and surroundings of the people, and explains why the greater portion of the town was inferior and neglected looking. Many of the houses had no windows and the door seemed to be always open so that passers could see all that was in the house, and that was very little—something like Machado Portello—just sufficient to meet the elementary wants of a family in a warm climate. Often in passing I saw the woman of the house sitting on the earthen floor, with a lace pillow in front of her, and making her bobbins fly in the fabrication of some intricate pattern to adorn the pillows, towels, etc. of her richer neighbours. If not making lace, it was dressmaking. The attitude was the same, only there was a cheap German sewing machine

making its presence known long before one reached the house in which it was working. In passing I may state that all over the fields Britain gets the credit for supplying goods of the highest quality, but it is the Germans who get the business. Where Britain gives a yard of cloth they give two. It does not wear half as well, but it fills the eye, and a dress piece to suit the climate can be given for next to nothing, and the nimble fingers of the women do the rest. Even when the pristine beauty of the crude colours are gone, a good wash and a little starch made from the mandioca plant does wonders to make the German shoddy shine again. This is only one of many examples which might be given.

On the high ground to the south, and over-looking the town, were the foundations, and in places the partially built walls, of an ambitious church. All were blackened, and involved in weeds, and creepers, of various kinds, indicating that no work had been done for a long time. Indeed, I was informed that the idea of finishing the church had been abandoned, and that in a Roman Catholic country, is in itself a striking testimony of the uncertain future of the town. Another example leading to the same conclusion, was a half built structure at the corner of the square already mentioned. It was a rather big effort, and it was evident that the builder had over-shot the mark, and the skeleton remains to rebuke him for his folly, and remind the town of its stunted progress.

Two reasons were given to account for this unsatisfactory state of affairs—the discovery of diamonds in South Africa, and the final abolition of slavery. The evidence undoubtedly goes to show that the South African industry, with its greater, and regular supply of gems of a uniform character, although on the whole inferior to those of Brazil, had disastrous effects on the Bahian Diamond fields, and the liberation of the slaves was the final blow. It ended all organised labour on a large scale. Even in cases where owners were prepared to employ their old slaves these were so enamoured with their liberty that they refused to accept any proposal of



MARKET DAY IN AN ISLAND TOWN

Barter is the principal medium of exchange—cash is very scarce.



that kind, and who can blame them. They were free men in a land where all were equal in the eyes of the law, and where every stream and crevice, or crack, amongst the rocks, offered an independent living to their skilful hands, and thus the unsatisfactory system indicated was initiated. There are signs, however, that the old spirit of animosity is dying out, and the present generation are coming to recognise that it is an advantage for all to work together in harmony under skilful leaders, and thus enable them by their united efforts to carry out operations that are quite beyond the power of the individual even when assisted by a few of his neighbours.

Luckily for Lençoes, and, indeed, for the whole Diamond fields, there are two important factors at work to encourage this tendency. The first is the presence of the descendants of the old white pioneers and captains of industry. These, although such a small percentage of the population, still maintain the traditions of their race, and while keeping their blood uncontaminated, exercise a powerful influence on their coloured neighbours, and in the changing circumstances are gradually assuming the old relations of master (Patrão) and man with mutual respect and confidence to the advantage of both, and making it possible once again to organise work on a scale commensurate with the increased difficulties of the fields.

The other factor is the occurrence of carbons. These may be called uncrystallised diamonds. In any case they are not gems, but wholly valuable because of their great hardness. They are used for a number of purposes where extreme hardness is essential, but it has been the extensive adoption of diamond-drilling in mining operations, or where an accurate section of the underlying strata is necessary, that they have come to have their present high price, and this is maintained because they are very scarce. In fact, Bahia is the only place where they are found, and thus the fields have a new lease of life, and ground originally worked for diamonds is again being worked for carbons. In doing so a certain proportion of diamonds are found, which escaped the original

workers. Carbons were known at that time, but, as one old gentleman informed me, they were only worth half a crown a carat, the slaves were instructed not to trouble to look for them, and he was certain that in many cases when found were thrown away. This being so the whole fields are practically virgin, and without giving the impression that this state of virginity is to be compared to the great wealth recovered without much labour when the first discovery of diamonds was made in 1844 it shows how the two factors discussed can be the means of retaining a measure of prosperity by the systematic working of the fields for many years to come.

As demonstrating what the possibilities are I may state that some years ago a carbon was found which weighed 3,078 carats, or $1\frac{3}{4}$ pounds and valued at some £54,000. To be of use, however, it had to be broken into fragments suitable for drilling, and thus carbons, unlike diamonds, do not possess extraordinary value because of their size, but because of their intrinsic worth for drilling purposes. From this it follows that carat for carat, with a drilling size minimum, one stone is as valuable as another, irrespective of size. Indeed, it is the practice to deduct the cost of breaking up of large stones to working size from the total value of the carbon, and thus a large stone is of less value carat for carat than one which requires no breaking up, but all the same it is only human nature to long for the discovery of a big carbon—the bigger the better.

CHAPTER VII

MARCO AND THE PASSING SHOW

AFTER some consideration we decided to take a house in the village of Marco as being the most suitable we could find, and at the same time allowing us perfect freedom to come and go as we pleased without undue criticism. My room faced the street, or main road rather. It had a stone floor and window without any glass, but was fitted with a heavy shutter and strong bar. The only furniture was a hammock, my camp bed and boxes. The other rooms were furnished in much the same way. For a dining-room table we laid a door on the top of four posts sunk in the earthen floor. The seats were supplied by the landlord.

This gentleman was a little brown man with a Jewish cast of features which gave him a characteristic appearance. I have seen the same peculiarity in other places in the interior of Brazil, and ascribe it to the assimilation with the common people of some of the Jews who went to Brazil when they were banished from Portugal in the early history of the former country. Be this as it may, our little landlord had all the financial ability of the Semitic race, and had acquired a small bit of land, and a row of houses in one of which he kept a shop and supplied his neighbours with black beans, farinha, and rum—especially rum.

The other villagers were also interesting, and we soon got on friendly relations with them, and before long the Doctor became the special dispenser of all sorts of information, but in one case he firmly refused to act. This was the case of a woman who was ill. Her husband

came to us and retailed his woes and his wife's symptoms. Clark suggested remedies but the Doctor, with his fuller knowledge, declined to do anything beyond sending a cup of tea, and insisting on the man going to Lençoes for a medical man.

Pending our Doctor's verdict Clarke got busy making a custard pudding, but it was all in vain. When the husband returned the woman was dead. No one seemed to realise she was so ill. At any rate, their sympathetic help after the event was all that could be desired. Finding there was nothing in the house they used their own goods where it was necessary. They dressed her in her best clothes which was only a much worn cheap print frock, and, to our astonishment, brought her body out of the house and laid it in front of our house—in the rancho—and there the body lay as if the woman was asleep; only the ghastly colour of her face revealed the truth. Although a somewhat hardened traveller I ate little breakfast that morning, and in spite of ourselves we could not keep our eyes from wandering across the road, and consequently we were pleased when we saw her placed in a hammock and carried away to Lençoes for burial.

This primitive method seemed to be quite common in the outlying districts, and while we remained in Marco we saw a number being taken in this manner to their last resting place. Indeed, the hammock is the usual mode of transport in the case of injury, illness, or death, and failing that a sheet is made to serve the purpose, and it is astonishing how willing every one is to give a helping hand as the carrying party passes along. With all their curiosity they do not stop to ask questions. They will know all in good time, and for the moment it is a case of necessity, and they swing into line, and when the pace is equal, the pole is transferred to the shoulders of the newcomers without a halt or a stumble.

One afternoon we heard an unusual commotion, and on going to inquire the cause we found it was a party of men approaching the village at the trot, carrying someone

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in a hammock, and calling to the villagers as they came near. The situation was at once understood, and the men arranged amongst themselves who was to act, hence when the perspiring men entered the village there was no need to stop and explain. The new men joined in the trot, and before we had quite realised what had happened the hurrying cortège was out of sight with the fresh carriers accelerating the pace. It proved to be a case of a wounded man being rushed through to Lençoes to reach a doctor. He had been shot in some quarrel, and it was a matter of life or death to get medical assistance, but they were too late. He was beyond human aid. Another life had paid the penalty of unbridled passion amongst armed men.

Being on the main road we were completely in touch with the life of the people, and scarcely a day passed without some incident occurring to interest us in our surroundings. A "Capangueiro" was the first to make our acquaintance. When he called it was no easy matter to guess what his occupation could be, and certainly no one would have taken him for what he really was, a travelling diamond merchant. When this was declared, I was amused to note his appearance, and compare his get up with that of the ladies who adorn themselves with his merchandise. He had on an old battered hat, a dusty black lustre jacket, and home spun trousers of doubtful pattern stuck in a pair of patent leather riding boots which had once been new. The tops were so wide that he utilised them for carrying a number of requisites, such as his diamond balance and slippers. Under his jacket he carried his "capanga" (bag) made of wild cat skin, and perhaps, more striking than anything else were his diamond scoops. These were the nails of his little fingers which had been allowed to grow to inordinate lengths, and trimmed so as to make effective scoops for lifting small diamonds.

He was willing either to buy or sell diamonds and carbons, but always at a price that was in excess of what they could be bought for in Paris. Any chances going

were not for the stranger, and far less for the foreigner. All seemed open and careless in their dealings but it was no easy matter to get within the local ring as professional gentlemen from abroad soon found to their cost. As we were not of this order it did not matter, and as a consequence our intercourse was of the happiest kind. In fact, they were sometimes just too confiding for my peace of mind. They would pull out a parcel of diamonds of anything up to £1,000 in value, and hand it to one to examine the stones for one's self, and turn and address their conversation to another without ever looking in the direction of their property. No doubt stealing would soon have been detected, but this I understand is quite unknown amongst them. Parcels of diamonds were continually being sent to Bahia in charge of some illiterate, poorly-dressed individual without him dreaming of either touching his rich consignment, or others trying to take it from him. In fact, stories were even told of such messengers getting drunk and a stranger taking care of his bag with its rich contents until he was sober.

None of these stories, however, touch the romance of the days of long ago. One of these occurs to my mind as I write. It is that of a young man who was sent to Rio de Janeiro by a rich brother with some cargoes of country produce. The journey took days and one morning as he was loading up he was surprised to see a man running towards him. Before he realised what had happened the man pushed a small packet into his hand, panting out as he did so: "Keep this for me" and was gone. Astonished beyond measure, the muleteer stood looking after the retreating figure, and at the parcel in his hand alternately. Coming to his senses he decided to remain where he was and await further developments, but after waiting two days and no one appearing he proceeded to Rio de Janeiro where, while transacting his brother's business he pondered on the mystery of the running man and the parcel, and at last concluded that the best thing to do was to open the parcel and solve the problem, but he was surprised to find that it contained a

collection of diamonds of the first water, and not a word or sign to enable him to identify the owner. Time passed without throwing any light on the mystery, but it gradually made the muleteer a rich man. (Note.—At the time in question the diamond laws were excessively stringent, and the penalty was often death or banishment as a slave to Angola on the West Coast of Africa.)

Among our visitors was an affable German. His name does not matter, only having been engaged in the diamond industry some twenty years previously he was known to the older men, but having retired to Germany his reappearance caused a good deal of speculation as to what was his object in visiting the Diamond fields. This was easily answered he said. He had come to buy diamonds and acquire diamond lands. These were to be had, and he soon obtained all he wanted and returned to the Coast, with the idea of going to Germany to get capital to work his concessions. It latterly transpired, however, that he was selling diamonds in Bahia. One of these was of exceptional size but somewhat defective in appearance. All the same he was successful in getting a syndicate formed to buy it. This done Fritz sailed for Europe. As soon as convenient the stone was sent to Paris to be cut and sold, but it was returned with the observation that it was an old friend from the Cape and was not worth cutting.

As the season advanced the people became anxious at the long continued drought. The time for the rains had arrived and yet there were few signs of a change in the oft recurring fleecy clouds which lazily flitted across the dark blue sky and collected on the western horizon towards sunset. The streams had dried up, and the rivers ran low, so that agricultural operations were delayed, and mining almost stopped. The former troubled the people very little. Their whole life and work were centred in diamonds, and when water became scarce the men were forced to go idle. This was especially the case in what was known as the dry diggings—that is, on the hill-sides and high land generally. Here the

conservation of water was no easy matter at the best of times, and at the worst impossible, as in a crisis such as that under discussion.

On the other hand, those who had river diggings were actively engaged in extracting as much "cascalho" as they could, and as these workings were in the hands of men with capital they employed a number of men who usually worked for themselves. Something of the same applies to those who obtain their values from "catas" in water-logged lands, but, after allowing for these, the great majority of the men usually found their living amongst the hills where water was never too plentiful, and where "cascalho" was scarce but values high. This class of mining appealed to the individual and during the wet season, and as long as water lasted, no place was too remote or desolate for these hardy adventurers. During the dry season, however, they were often reduced to extreme poverty, and when the season was exceptional as it was when I was there the pinch is greater than usual.

However much we might sympathise with the people this state of affairs suited us very well. It enabled us to move about, and see things beyond our reach if the country had been flooded with torrential rains, and it had also the effect of making it easy to secure good men as guides, etc., and that was also a consideration of some importance where all men were so independent in ordinary times.

The first place which excited my curiosity was the Ribeirão do Inferno. As seen from the road it was a great gash in the mountain side suddenly terminated on the elevated sky line by a wall of whitish grey rock crowned by scanty vegetation. The gorge itself was a mass of dark green foliage through which the naked walls could be seen here and there, and offering a tempting bit of exploration on historical grounds—that is, from a diamond point of view—within easy reach.

Leaving the road between the village of Marco and the river we ascended the Red Hills by a very irregular path over broken ground where the soil had all been

washed away in the search for diamonds. Near the top there was a large watercourse carrying water as far as the Mosquito Valley, but here and there along its course from the point where we crossed it were small transverse channels taking water as required to every part of the low lands through which ran the main road. Shortly after this the red clayey subsoil gave place to dirty coloured grey sandstone with wiry scrub growing in the cracks and where there was any soil. As we approached the river, however, this changed to dense bush through which we had to cut our way, disturbing large numbers of butterflies with transparent wings and clouds of mosquitoes.

Finally we emerged on the river at the top of a waterfall where a rough path from Lençoes crossed to a hamlet among the mountains. The steeply-inclined rock over which the water flowed rather than fell was smooth and polished, and as the water was too low to cover more than a mere fraction of the width it shone in the sun like burnished metal with some spots brighter than others. A closer examination showed that it consisted of water-worn pebbles of various colours embedded in a red matrix. On the bank where this could be seen to better advantage it proved to consist of angular fragments of iron-stained sandstone. It was peculiar to see the pebbles sticking out of this like so many large plums, and extremely difficult to walk on where dead vegetation and soil had not levelled up the inequalities. What struck me as strange was the soft stone being in angular fragments—some quite big—while the hard quartz pebbles were rounded and smooth. Two things were certain—the former had never been subjected to the grinding action of moving water while the latter must have been buffeted about for a long time. The question was how could two such dissimilar facts be reconciled. My explanation may not be the correct one, but at any rate it is an attempt to solve the problem. I suggest that the pebbles were concentrated and ground down to their present size, and form, by being knocked about in a

tempestuous sea, which thundered against cliffs of red sandstone, breaking them up, and encroaching on the land. While this destructive action was going on a general subsidence was taking place which rapidly buried the crumbling rock beyond the action of the waves.

Leaving our mules we proceeded up the stream, clambering over rocks and wading through pools. As we advanced the scene became wilder and the cliffs closed in till they became towering walls little more than one hundred and fifty feet apart. A prominent feature of the beetling crags was another bed of conglomerate some thirty feet thick. It had none of the angular fragments characteristic of the former, but otherwise the general constituents were the same. I cannot recall the distance between the two, but it was considerable, and was probably some two or three hundred feet. I merely mention these figures to give some idea without wishing to convey the impression of actual measurement.

All through the gloomy gorge there was abundant evidence that it had been worked by the miners time and again, and yet I am satisfied that there are diamonds left. This conclusion is based upon the enormous blocks of conglomerate lying piled in the utmost confusion in the bed of the stream, and which nothing but heavy charges of high explosives could break up and remove so as to make the underlying "cascalho" available. Then, too, there were cracks and pot-holes equally promising, and, of course, each successive flood tends to wash diamonds into the river, and hence it was never quite neglected by a stray miner or two, even when they have no right to be there. The river was leased by the Government to several men in Lençoes, but it is no easy matter to prevent poaching in such a wild and desolate place. This fact was forced upon our attention for on turning the point of a jutting rock we found a man and a boy busy washing gravel which had been collected somewhere in the vicinity. I merely wished the man good luck as I passed, but my companion anxious to see the process of

washing with the "batea," and, of course, to find if the man got any diamonds, stopped and began to show that he took a decided interest in the operation. His inability to speak the language and explain his presence and object made the miner restive, and at last he growled, "What do you want?" Needless to state there was a hasty retreat. It was safer to risk our necks in negotiating the difficulties of the river than the anger of the fierce "garimpeiro." All the same I wondered that no amalgamation of interests took place and the whole river treated by hydraulic power. It lent itself excellently for this purpose. A sluice could have been made about the fall mentioned, and a dam at the top of the gorge. With some piping, a flexible lead, and a monitor, every crack and crevice could be completely washed out, and the contents examined in the sluice. The expense would be considerable, but the certainty of the results would be ample recompense.

At last we reached the transverse ridge and found that the stream divided. That coming from the north was the principal, and passed through a great amphitheatre-like basin, with the mountain mass all round. In the other direction the break continued into the Mosquito Valley.

When returning, instead of attempting the fatigue of the river-bed, we climbed to the top of the escarpment, on the left bank. By doing so we thought to avoid the more difficult way and at the same time examine the surrounding country. We found, however, although in the distance the slope had the appearance of a regular declivity it was in reality a most rugged, broken surface, and very little improvement as far as walking was concerned on that of the river level. On the other hand, it was interesting, as showing a new phase. Great cracks cut somewhat diagonally across the dip of the strata, unless in the vicinity of the river where they were more or less parallel with the river, and without question the boulder-impeded nature of the river-bed had its origin in such cracks cutting off portions of the main mass and causing periodical avalanches of rock.

These cracks, in addition to being an interesting geological feature, were splendid collecting places for diamonds, but unless in the shallower or less developed fissures there were no signs that the miners had attempted to open up and clean them of their hidden wealth. No doubt the possibilities they presented had appealed to many, but they cannot be blamed for failing to put their opinions to the test. The cracks were evidently very deep—fifty feet at least in some cases, as I found by dropping stones into them and making allowance for filling up—and the conglomerate exceedingly hard, and consequently to make a shaft, and run drives at the bottom very costly, especially at the time when the rest of the ground was worked, and, of course, there was less need at the time to undertake expensive operations as much of the ground was virgin and easily worked, but no doubt the procedure indicated here will be adopted some day. In the meantime what set me thinking was the origin of the cracks. I have seen similar features in a modern lava flow, but there was nothing in the nature of the conglomerates to suggest that the cracks were produced in the same way, and to explain the phenomenon I came to the conclusion that they were due to movement. This at least was the case with the cracks running more or less parallel with the river, and once I discovered that the whole of the visible series rested on soft and impermeable shales there was no reason for refusing such evidence as being the cause I was looking for. The water filtering from the rocks above would accumulate to some extent and the channels by which it had gravitated be lines of weakness which developed into fissures under the unequal stresses originating in the water acting on the soft greasy-like shales. Especially would this be so where the inclination was considerable as in the case under discussion.

In passing it should be observed that I came to the conclusion that it was time for me to modify my phraseology as far as describing the diamond bearing region as consisting of a range of mountains is concerned. It

is not a range and yet it is mountainous. The elevation above sea level at different places in proximity demonstrates this point, but there is none of that abrupt confused upheaval which is associated in our minds when we think of mountains. It is rather an ancient undulating plateau produced by the slow process of accumulation and elevation, and upon which the wastage of time has played with unsparing tenacity, giving the result that when we approach the district from certain directions, we are deceived into thinking that we are looking at a mountain range, whereas when seen from another locality it merges into the surrounding country, without any very great variation in elevation or general appearance. This was what I saw when we had the pleasure of exploring to the west, beyond the head waters of the Ribeirão do Inferno, and subsequent wanderings in the district confirmed my conclusions as given here.

The formation just described is not limited to the district around Lençoes, but extends, with breaks, into the State of Minas Geraes, where diamonds were first found in Brazil. But confining our attention to Bahia, it may be said that the actual diamond-bearing area, as at present recognised, is only a fraction of the whole, and approximately runs from Sincora in the south, to Estiva in the north. The width varies according to the inclination of the conglomerates. Where they are more or less level, and exposed, the width is greater, but where the dip is high the working width is limited, and the short trip here discussed took us across the entire width of the diamond field—some three miles. It is true that diamonds have been found to the east of the São José River, but to no great extent, and there is reason to believe that the vertical section is a repetition of that traversed—a small portion at least. This is due to a fault that is supposed to correspond with the course of the river, and while it is likely that a continuation of the Red Series underlies the narrow alluvial valley, that on the east side of the river is sandstone similar to that associated with the conglomerate, and is thrown up and tilted to the

east at a high angle, but without exposing any conglomerate.

How far the highly inclined strata extends to the east is unknown, but the arenaceous ridge soon gives place to rocks of a clayey nature, which, being softer, do not stand out so prominently, and producing a better soil the vegetation is fairly dense, and as far as I could gather from those who saw the district in the early days, very much the same as the land on the western side of the river, before it was so completely transformed by the diamond washing. If this is so, the question arises how far it may prove diamondiferous could water be applied to wash it in the same thorough manner as in the other case, but on a large scale with modern appliances. And if geological identity was established would it prove the same, or some other horizon? This is important inasmuch as it either limits, or extends, the vertical range of the diamonds, and the area over which they may be found, and that without reference to the conglomerates.

These remarks dealing with the lands to the east of the São José show, that although little work to prove them has been done, it would be a mistake to neglect to consider future possibilities. At the same time they are not included in the recognised producing area. This really begins at the São José River, and runs west till the last vestige of the conglomerates disappear. The high inclination, however, limits the length of this line at the place we are discussing. The dip may be taken as being about twenty degrees and corresponds with the higher slope, as it rises from the base of the Red Hills. It has the advantage on the other hand that it exposes a greater range of strata, and enables us to see how the high lands have been built up. The total thickness may be some 1,000 feet, but it would be rash to give this thickness as an accurate section, but with reference to the sequence there is no doubt. The lowest of the Series seen is the shale found in the bed of the Ribeirão do Inferno, followed by sandstone, a bed of conglomerate, more sandstone, another bed of conglomerate, further sandstone,

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and then the red series, which varies considerably in colour without changing in general character.

The actual age of this section of the Geological Record is still an unsettled question. An American writer gets the credit of having ascribed it to the carboniferous period, but upon what grounds he does so is difficult to understand. There are no fossiliferous rocks in the Diamond fields. The nearest approach is a considerable distance away, and the specimens few, and of an earlier period. The rocks themselves as seen along the line given—that from Sincora to Estiva—offer no encouragement to such a supposition. Neither the sandstone nor shales offer any suggestion leading to the conclusion that they belong to the great coal age. Hence when in doubt in judging from lithological appearance it is a safe rule to assume that the rocks are not carboniferous.

The discussion of this question of age has more than academical importance for a thorough knowledge of the geological system would go a long way to the ultimate solution of the origin and distribution of the diamond.

Continuing to review the facts which came under my personal observation, let it be understood that no diamond was found *in situ*, but evidently the result of denudation and concentration, with some predisposing cause, to make one locality richer than another. This, of course, could be due in a measure to the irregularity of the masses worn away, and no doubt this difference in disintegration played its part, and, as suggested already, when dealing with the situation of the principal towns, an important part, but I am under the impression that, as in mineral deposition generally, there are variations in the wealth of the richest areas. The cause of this selection is unknown, but that the action was co-extensive with the distribution of the diamond may be taken for granted, and we can further accept as a postulate that the process continued for a very long period. Take the section given above. There we find diamonds through a vertical range of some 1,000 feet. It is true that not being *in situ* the information is far from conclusive that

they are concentrated from the denudation of the rocks upon which they lie. Especially is this the case where the strata is highly inclined. Indeed, this circumstance is utilised to explain the distribution from a given source and this source is generally confined to the conglomerates. This conclusion I am inclined to question, and extend the source to the rocks immediately above the conglomerates. In other words, I recognise that the conglomerates, with our present knowledge, are the key to the position, only I wish to infer that some time subsequent to the formation of the conglomerates, the diamond was being deposited in the silt and sediment that goes to the making up of the geology of the Diamond fields.

In giving this selected evidence of the vertical range over which the diamond is found I have made it clear that it is not my opinion that they have originated where they are found, but have come from some source which is unknown, and older than the rocks with which they are at present associated irrespective of their nature, but allowing for the fact that conglomerates being themselves concentrates are consequently likely to be richer in diamonds, and the thicker the beds the richer the deposits. Yet I have seen very thick beds of conglomerate in Brazil which contained no diamonds. This is by the way. I have assumed, however, that the source was acted upon before, and when, the conglomerates were being formed, and gradually became exhausted, and finally lost somewhere about the geological horizon of the Red Hills series. In this confession I admit that I have no evidence to show, how, when, or where the diamond was formed. All I can say is that there are no signs of mud volcanoes similar to those found in South Africa to be seen anywhere I have travelled in Brazil, and those who have read my paper "On the Diamond fields of Brazil," which I read before the Royal Society of Arts, will learn that my travels in search of diamonds have been extensive.

CHAPTER VIII

CAPÃO PRETA AND PEDRA CRAVADA

ABOUT the time of which I am writing there were rumours that a new discovery of diamonds had been made, or, at least an old discovery found to be more extensive and richer than was originally supposed. It was at a place called Capão Preta, some distance to the north of Lençoes. As it was said to give employment to a considerable number of men I decided to go and see them at work, and note the general appearance of the country. For this purpose I secured a guide and putting a piece of "requeijao" (a kind of cheese) in one pocket, and a lump of "rapadura" (unrefined sugar) in another, with some biscuits to serve as lunch, I set out for Capão Preta, under a cloudless sky and burning sun. Taking the road to Lençoes, we clattered up the rocky hill to the town, across the bridge, and past the barn-like church with its squat towers. This led us on to a rough mule-track running parallel with the São José. The country was rugged and sterile. Rocks lay scattered about, and coarse scrubby vegetation struggled for existence under unfavourable circumstances. Every now and then we crossed a stream coming from the high lands on the west and joining the São José. At one of these, the Mandasaia, I stopped, and, leaving my mule, explored it to its junction with the main river. It, however, contained nothing of interest beyond the residues of the diamond-washed gravel found nearer its source, but I was surprised to see that the São José had become an insignificant stream only eight feet wide, and passing a mere trickle of water.

While I was thus engaged I was surprised at the number of butterflies I saw, for while Brazil has a great reputation for these insects this district is anything but rich in either numbers or varieties. Hence I was all the more surprised to see such large numbers of a single species flying overhead as I was returning from "paddlin' in the burn." By the time I had reached my guide they had increased in such numbers as to constitute a butterfly storm. I have forced my way for miles through a battering hail of locusts which darkened the sky, and seen the ground covered with the discarded wings of flying ants, but never before had I seen such a wonderful sight. It resembled nothing so much as a snowstorm—one of those gentle falling, large flake kind, but in this case there was brilliant sunlight, and the gorgeous shining colours of the insects. They were in millions, and gave the impression of a fluttering fall, but the numbers in the atmosphere were never the less, and those which reached the ground did not rest long, while their neighbours overhead could be seen as gradually diminishing tiny specks until lost to view in cerulean space. They came from the north and where they were going was a mystery. Nothing more was ever heard of them.

Shortly after leaving the Mandasaia we left the mule track and took a water-worn path which was little better than a torrent bed, and evidently but seldom used. It was full of loose stones and cumbered with dead wood, while the bushes which met overhead were entwined with creepers and liberally supplied with hooked thorns, so that it was a very disagreeable ride, and would have been a great deal worse had it not been that the path kept rising all the time and for the last few hundred yards was a climb. For this reason we were not so badly scratched as one would have expected, but what the mule might have said was another question. This will be understood by those who have experience of riding in bush.

When we got to the top and free from the bushes we found we were standing on the edge of a more or less level plain covered with short withered grass. In the

distance was a low line of hills which terminated to the north in a wooded elevation slightly higher than the rest of the range or ridge. This was Capão Preta, and somewhere between us and it were the diamond workings I was searching for. As these were not visible it was obvious that the plain was not so level as it seemed, and once we commenced to travel over it we found there were many depressions. We tried to make a bee line for our objective but this was frustrated by obstacle after obstacle in the way of small marshy streams, and ugly morasses (atoleiros), and the grass that seemed such a nice carpet when seen at a distance proved in reality to be very thin and tufty, and quite unable to hide the rocky surface which here and there had a thin layer of loose water-worn pebbles—the remains of a denuded bed of conglomerate. Where the grass was thick and green it covered the embarrassing and dangerous “atoleiro” and to be avoided at all costs.

After several checks due to these causes we saw a solitary individual doing something in the distance, and we made for him. He proved to be washing “cascalho,” but he left his work and came to meet us as we approached, and made us welcome to his humble abode, for by this time we saw that he had a small rude grass hut in a hollow by the stream. What interested me, however, was his work and surroundings. There was more water than I expected to find at such an elevation, but the amount of “cascalho” was very limited, and he seemed to depend upon what he got from the cracks in the rocks around, especially in the stream. But the evidence was against the supposition that he had been at work very long or done very much. All the same he was able to show me a carbon he had found as well as some small inferior diamonds. The carbon would be about a carat in weight, and very irregular in form and of a strange whitish-brown colour, and seemed to have minute inclusions of some kind. So much did these peculiarities strike me that I took a quartz pebble and tested it for hardness. It scratched the quartz all right

and with such an incisive cut that there was no room to doubt its genuineness. This incident reminds me of an experience in Minas. I was shown some diamonds. Among them was a black stone which was said to be a carbon because it scratched bottles and rock crystals. I refused to accept its face value and subsequent events proved I was right. The tests given are the only ones the miners know apart from colour and general appearance, and, hence, where there is a limited experience, there is room for a mistake being made. I have put a carbon amongst as many pieces of ironstone pebbles of the same size, taken from the Ribeirão do Inferno, as one could comfortably hold in the hand and asked an expert who was continually handling carbons to pick it out. He could not do so at the first attempt, nor did I ever meet one who could. Hardness is the supreme test and no specimen should be bought which does not scratch corundum. This similarity between the stones mentioned will prove a serious problem in some portions of the fields should they ever come to be worked on a large scale, either with, or without, machinery, because not only is the colour the same but the specific gravity is also near enough to cause difficulties. Eliminate the ironstone and the carbons are gone. Keep it in and you have to hunt for the carbon, and as the abundance of the ironstone amounts to some twenty per cent. of all the residues for final separation the problem is not an easy one. Nor can the magnet be depended upon to remove more than twenty to twenty-five per cent. of the total. Even with heating, the magnet will still leave a large quantity to be dealt with.

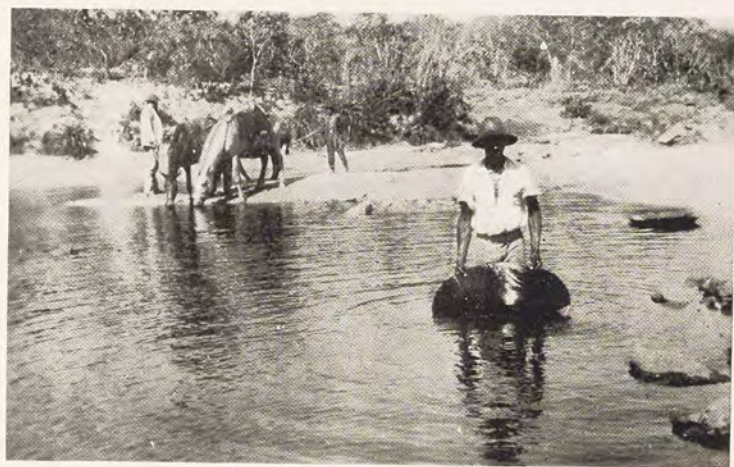
Leaving the lonely miner, and following his directions, we went along the banks of the nascent stream as far as possible, and in doing so of course kept the lowest line in the subsidiary valley in which it flowed, and the place where one would expect to find any miners at work, both because of the water, and the concentration of the gravel. In this we were not disappointed. We saw a number at work much in the same manner as the man we had

left. In one case two men and a boy were working a "grupiara"—that is, a deposit of "cascalho" or gravel, on the dry land some height above, and distant from the water. They were carrying the gravel to a "canoa," or ground sluice, similar to that sometimes used in alluvial gold mining. The water supply was limited and to get the weight and volume necessary for their purpose they had made a dam which they broke when sufficient had collected to wash a "canoa." While the water was flowing through this the two men kept agitating the gravel with a hoe, but always against the stream, and lifting out the larger pebbles as they did so. When all the mud and sand were washed away, and the gravel was nice and clean the men took the "batea," and the dam itself became the scene of operations, where, standing in the rising water, they carefully treated each "carumbe" (a wooden dish something like a batea but not so carefully made, and holding from twenty to twenty-five pounds of gravel) that the boy carried to them from the "canoa."

Shortly after this we crossed the water-shed, and entered the main valley at the base of Capão Preta. It was a somewhat elongated, gentle depression, with a stream flowing through the centre in a northerly direction, and a number of runlets joining from either side. These had their source on the rim of the drainage area at right angles to the main axis of the valley, and only became distinct watercourses instead of mere filtration products due to the nature of the soil under disintegration. This was of a black muddy character, resting on pure white sand and gravel, and once the cohesion of the surface roots and vegetation were broken became, in the presence of water, a perfect quagmire. Towards the centre it was sometimes as much as eight to ten feet deep, but varied very much, and gradually became less all round to the rocky margins which have already been described.

This then was the place where the rich discovery of diamonds had been made, and where a large number of men (relatively) were engaged in searching for them. Wash-outs were numerous which combined with the

many minor bends made it difficult to see the men or realise the real activity of the place. This deceptive impression was encouraged by the entire absence of noise which is a usual feature of industrial activity, but at Capão Preta silence reigned supreme. Besides, it was impossible for us on mules to move about freely even if it had been discreet to do so. It must be remembered that I was an uninvited guest, and so had to be satisfied with a general impression, and one or two definite examples which came under my observation, and in this connection I may state that it was here that I saw the finest exhibition of washing with the "batea" that I ever saw. There was a "Turma" (gang) of five men. They had collected a considerable quantity of "cascalho," and four of them were standing in a made pool of water up to the hips, with their "bateas" in front of them. The fifth man supplied the gravel. This was emptied into the first and largest "batea" which was managed by the youngest of the quartette. He took out the largest pebbles and transferred the remainder to the next man in seniority, who reduced the quantity still further and passed it on to the third man. By this time little remained, and number three had more time to examine his "batea" before he gave the contents to the chief of the gang for final examination. The work went on like clock-work without stop and with a rhythmical movement that was fascinating, quite apart from the thrill of expectation. Each man had his own distinctive manipulation, but there was always the circular motion, and continual shaking, with occasional dip and clearance of some of the worthless stuff from the top. Every movement was so quick and dexterous that it was difficult to imagine that the men could detect the presence of diamonds, but long experience had trained the eye, and gave them confidence; besides the gravel was subject to the scrutiny of four men and the last had a concentrate *and he took his time*. The residues he left, were put aside, and it was no uncommon sight to see quite small children sitting patiently "escrivendo" (writing) these sandy



WASHING FOR DIAMONDS WITH THE BATEA.



remains for small diamonds—"mosquitoes" as they are called—mere specks. This writing like everything else associated with the industry wanted practice to be efficient. A small quantity of the sands were put into a "batea" with about an egg-cupful of water. A circular motion was given to the "batea" until all the sand was nicely concentrated in the centre, and then the dish was tilted towards the operator at an angle sufficient to put the water clear of the sand without disturbing it. Still holding the "batea" as described, the water was then sent rushing round the "batea," and on the descent it was made to cut off a portion of the sand, and lay everything open to inspection. The operation was continued again and again as long as any sand remained, and when finished presents so many lines that look like a child's copy-book that the word "writing" came to be applied to the process.

The men were all coloured, and their attitude was in striking contrast to the man we saw on the Ribeirão do Inferno. Instead of resenting my presence they were frankly pleased at my undisguised admiration at their skill. This admiration I may state, however, was extended to their bodies. They were naked to the waist and the play of their muscles under the shining perspiring brown skin was worth seeing, and, as has been observed before, the colour seemed to harmonise better with the general surroundings than white would have done. Be this as it may, it was a picture any artist would have delighted to paint, or a sculptor to mould. It was a revelation to me, and an explanation why so many men on the Diamond fields had such muscular frames and powerful arms—produced so many strong men. I had seen miners, (diamond miners) at work before, but either the nature of the labour at the time, or a dirty ragged garment, had prevented me from appreciating the beauty of form and strength of these uncouth men.

Their living places were primitive in the extreme, and beyond the fact that they blended perfectly with their surroundings had little to recommend them. They were merely bush-ribbed huts in the form of large bee-hives,

and covered with grass similar to that growing around. This made them quite invisible at a short distance, and helped to strengthen the illusion that the place was as lonely as it seemed. Each man put his abode in the spot most convenient to himself with the result that they were scattered all over the valley—not so much numerically as in relation to each other, and as the structures were the product of a rapidly changing phase of the owner's work, none were old enough to become insanitary, and so in that respect they were quite satisfactory.

In all this there was little to distinguish it from the methods adopted by white prospectors in similar circumstances, only in that case there would, perhaps, have been a tent or two, and some sheets of corrugated iron. What, however, was quite foreign to British experience was the presence of women and children. Each hut had a family of more or less children playing about amongst the tufted grass, or following the example of their elders in looking for diamonds at the base of the black muddy sub-soil. Whatever the occupation, they were quite happy, and the mother content in following the fortune of her protector. She had evidently no dressy inclination. A chemise and a petticoat satisfied her sartorial ambitions, although no doubt she could, like her sister in town, turn out in a bright coloured frock on feast days.

This state of affairs was no isolated occurrence, but part of a great Brazilian custom. It is unnecessary to stop to discuss whether it was due to the initiative of the man or the woman, but the fact remains that a man is seldom far removed from his women-folk, and in this respect it is a good thing that an army consists of young men, otherwise Brazil would be saddled with a great encumbrance. As it is the camp followers are no mean portion of the force. I happened to be in the State of Matto Grosso when one of the periodical revolutions was under way. It was so serious that the Federal Government were forced to interfere and send troops. These were encamped on a piece of level ground on the outskirts of Corumba and lived in tents. It was a scene

not easily forgotten. No doubt order and discipline prevailed, but to the ordinary civilian it was an extraordinary picture. No one seemed to be on duty and men and women in all sorts of easy dress (it was very hot) were grouped amongst the tents in happy confusion, while all around were clothes of many colours airing in the sun.

Having seen all that was of interest we returned by another route. It was farther to the west than that described, and lay along a narrow marshy valley some distance from, and more or less parallel with, the range of hills already mentioned, and intersected by a network of runlets which, uniting, made the streams that formed the headwaters of the São José River. After a good deal of difficulty we joined the Palmeira road and passed the village of Barro Branco. This was remarkable for its barren surroundings and the glaring colours of much denuded strata. In other respects it was very much like Marco—perhaps poorer to judge from the neglected appearance of the houses and the absence of white-wash. Certainly there were no lack of idle men, who, for once, found concentrated occupation in staring at the stranger, and keeping up a running commentary on his appearance and probable business. They even tried to draw the guide into conversation to satisfy their curiosity.

Shortly after this we came in sight of Lençoes lying in the hollow below. It presented a pleasant picture in its rugged contrasts of barren grey rock and white-washed houses with red tiles, limited patches of irrigated green, on made soil, and a portion of the river banks white with drying clothes.

Descending the much worn bridle path, we crossed the stone bridge, took the rocky ridge, and cantered along the well known road to Marco, where our usual dinner of black beans, "farinha," and "carne seca," was waiting for us—a poor reward for a long day's work, but such are the Diamond fields of Bahia.

Another expedition about this time was to Pedra Cravada. The Doctor accompanied me, and Benito acted as our Sancho Pancha. At Lençoes we picked up

a "citizen" as another companion. He was of that short sturdy type that can be seen any day in the fields of Portugal, but to have suggested that he was a mere workman would have been a serious offence. He was about fifty years of age, and a shopkeeper in a small way, but deeply interested in the buying and selling of diamonds, and while he, probably, had little cash, he was not altogether poor, and could afford to finance, by goods, a fair number of miners. Hence to prevent any mistake I adopted the phraseology that a Brazilian of the lower class usually assumes to protect his dignity when I used the word "citizen." Senhor Citizen was gratified at the compliment and accepted his new name as an excellent joke.

The pathway was the same as that to Capão Preta until a short distance beyond the Mandasaia, when we crossed the São José, and bore away to the right, and in doing so left the sterile grey sands behind, and entered on the Red Series, with its more fertile soil. The country, however, was neglected and as wild looking as in the days of the Indians. We did pass a "fazenda" (farmhouse) but if Senhor Citizen had not pointed out the fact we would probably not have found it for ourselves. We saw no cultivation, but this may have been away in the bush—a common custom, and the low buildings were hidden from the road by rank vegetation kept in line by a few fine trees and a post or two, and conveyed the impression of neglect and indolence. There was not a sound or sign of life. This was remarkable, for no matter how lazy a person may be, his dogs, pigs and fowls follow the custom of their kind, and this, with one exception, was the only place I can recall that claimed to be a farm where I was not painfully aware of the presence of the "friend of man," and the "gentleman who paid the rent."

The exception referred to was in the State of Minas Geraes. I was travelling in the far west and, becoming benighted before reaching my camping place, lost the road. A conference was held, and as a result it was decided to push on to the first water, which was not sup-

posed to be far distant, as the district was well watered. Cautiously feeling our way in the dark uncertain path we at last saw the outline of what to our surprise seemed to be a house. Halting the mules I and one of my men went to investigate. It proved to be a house standing within a stockade—strong and newly made. We called, but received no answer, heard no sound, and saw no lights, therefore we concluded the place was deserted, and went up to the building without further delay. We found the doors and windows open. In fact, a portion of the building was still unfinished, but there was abundant evidence of occupation. We saw saddles, bridles, implements of agriculture, and quite a lot of household effects. This was more than we bargained for, and we became more careful than ever. Going to the back of the building we found it had a verandah on that side, and then an out-building with some fine pigs wrapped in porkers' dreamland. Beyond them we heard the gurgle of running water, which proved to be a fine stream, and that was important to us. We returned to our mules and brought them to the verandah where we decided to spend the night, and see what happened in the morning. With this decision everyone got to work, and soon one of the men reported the discovery of another building a short distance away. I went and saw it. It, too, had a verandah which was evidently used as a living-room. It had a table with dishes on it and every sign of a recent meal having been taken. The room adjoining was locked, but it seemed empty as our knocking failed to get a response, so we retired to our verandah to await developments. With the first streak of day we were on the move and soon coffee was ready. As we were taking this we were astonished to see a white woman with three children—one in her arms and two by her side—coming towards us. She confessed that she was in the locked room when we knocked but being alone and not knowing who we were was afraid and remained silent. A few biscuits to the children soon made us friends, and she told us that they had only recently taken up the land, and

that her husband and his man had gone to a village about twenty miles distant to sell some produce, and buy what was required to carry on his work, and provide for the family.

From the "fazenda," the main road was good until we branched off to the north-west. Senhor Citizen took advantage of this fact to ride alongside and impress upon me the great richness of the Diamond fields, and what a splendid opening there was for foreign capital. "Muito rico" (very rich) was hauled into every other sentence until it became monotonous, and yet this was but the beginning of my experience of this phrase. Everyone seemed to be inoculated with this idea—the ignoramus innocently enough. His standard of wealth was low and he had no conception of values and costs. But men of the stamp of Senhor Citizen were out to spoil the Egyptians. There was a third category—men who saw wealth in everything one looked at or touched. A ludicrous example of this kind occurred to me in another part of Brazil. I picked up a stone to look at it more closely, when to my astonishment, a man suddenly asked me its value, and held out his hand as if expecting me to drop the cash into his itching palm. Needless to say he was laughed at to his confusion. This is an extreme case, however, and not likely to happen often, but the principle is at work all the time. On one occasion the "muito rico" theory was disastrous to the owner of a large estate. He wanted cash and a good deal of it for the right to work diamonds on his land. Apart from the property and the bony cattle, he was poor and illiterate, and like all such he was correspondingly suspicious of being done, while having inflated ideas of wealth. Every overture that seemed to meet his growing demands was countered by further difficulties, until at last the limit of possible advantage was reached, and patience more than exhausted. The negotiations were broken off, and the landowner was forced ultimately to divide up the estate among his heirs, and now any portion of it could be had for a mere song.

Another aspect of this same question which caught me

repeatedly in the course of my travels in the country was my anxiety to please my "muito rico" friends, and at the same time make sure that I was not missing some of the fabulous wealth of Brazil. This was going to see properties whether diamond, gold, manganese, iron, etc., which were reported to be "muito rico." Sometimes the tradition was widespread, and at others the dictum of one or more interested persons. In any case I tightened my belt and saddle girth and set out for the new "El Dorado." Sometimes I would sleep in the open under the glorious twinkling lights of heaven, and at others in very indifferent quarters. I remember waking one night in an old mill with a vampire preparing for action on my nose, but it did not get me, although some of its companions found my mules, as I discovered in the morning, by the broad spreading streaks of blood on their necks and flanks. In this way I came in time to have a good idea of what value to put on "muito rico," and from what I have written readers can guess the nett result, and if they are inclined to travel in Brazil in search of wealth they must be prepared for many disappointments, and cause corresponding disappointment to men of the Senhor Citizen type, and even a few individuals nearer home.

At the Mocugesinho, a tributary of the San Antonio River, we again reached the diamond bearing zone, and stopped under the shade of some trees to give the mules a rest and have some lunch. This was simply a dip into a lucky bag in the way of a small sack containing farinha, a chopped up chicken, and pieces of meat. I washed mine down with some water from the stream, having failed to appreciate the wine which the Doctor, and Senhor Citizen, heroically swallowed, while assuring each other that it was excellent wine from the Douro. By luck we were able to finish by a cup of coffee. This was provided by Colonel S——, who happened to be mining a short distance below the drift. He had some twelve men at work. Their object seemed to be quality rather than quantity of "cascalho," for they were excavating in

the bed of the stream with crow-bar, wedge and hammer. One of these was a mass of iron weighing about thirty pounds, and with a handle as thick as a stout walking stick, and the same length. I tried to lift it but the handle bent at such an alarming curve that I was afraid it would break. The men laughed and one good-natured fellow showed me how to use it. He caught the top of the handle with his left hand, while the right was as near the iron as possible. In this way he raised it above his head and gave it a mighty impulse, letting his right hand slide freely during the fall. The result proved that the tool was an effective instrument in the hands of a strong man.

The work was essentially one for the dry season, and the men had cut a deep channel, but deep as it was the Colonel assured us that it still continued to give diamonds in handsomely paying quantities. It should be stated, however, to explain this feature it was not the sandstone which gave the diamonds, but the "cascalho" which continued to be found in small quantities in the cracks and backs in the sandstone.

The men began work at six in the morning, and worked to the same time at night, with one hour off at noon. They were paid 2\$000 (two shillings). I must say, however, that they were not pushed, and seemed to take a smoke whenever they pleased. All the same it was a long day in the burning sun, which was felt all the more due to the radiation from the bare white rocks. Bad as it was for the coloured men, it was worse for the white man, and yet the Colonel was there all the time, and the busiest man on the job, with eyes for the most minute detail. Indeed, without these being good, and trained to all the tricks of the trade, a considerable amount of the total value would have been lost in the process of recovery. As in the case of Capão Preta the men had their huts overlooking their work, and their women to attend to their wants.

Between the Mocugesinho and the San Antonio a good deal of work had been done, and the Red Series

worked to some extent, but nothing like on the same scale as at Marco and Mosquito. At one point the washing exposed a wonderful feature. It looked like an irregular tessellated pavement on a large scale, where the stones had become worn into saucer-like hollows, and the edges raised above the normal level. This peculiarity was probably due to secondary enrichment of silica from circulating water, which had only penetrated the adjoining strata to a limited degree, and produced a crystalline structure at the edges of the backs and cracks, and gave these portions an iron-stained quartzitic appearance. A specimen submitted to the Geological and Geographical Commission of São Paulo was pronounced to be a sandstone crystallised by secondary infiltration of silica. This report is interesting and may prevent mistakes.

The San Antonio proved to be a fine stream some twenty-five yards wide at the drift. The current was not strong and the bottom smooth, but the water was rather deep to be pleasant, and it would take no great rise to make the ford impassable. On the left bank there was a small village hugging the base of some beetling crags of conglomerate. The principal house was a store with a good assortment of such goods as the inhabitants required. The elevation of the place was about 1,900 feet, but after we began to climb the rocky sides of the high plateau, and before we had travelled three miles the aneroid read 2,700 feet above sea level. It was an astonishing bit of country—rugged and barren in the extreme. The naked rocks glared at the sun and radiated heat like a furnace, and what hardy vegetation that managed to exist found sustenance and shelter, in the rents which fissured the stratification in all directions. This varied from sandstone of varied degrees of hardness, but fairly uniform in colour, to conglomerate of the brecciated type, seen at the Ribeirão do Inferno, and it should be noticed that the elevation is about the same. As we advanced we continued to rise, and the conglomerate to dominate the landscape till at Pedra Cravada itself we had reached an elevation of 3,000 feet above sea level.

Nor was this the highest point on the horizon, but it seemed to be the northern extremity of the "pedra cravada" (conglomerate) that was exposed. Overlying it to the north, and west, were grass-covered slopes, which gradually increased in elevation to probably two hundred feet more, and with this the sky line, and so the view was limited in those directions. To the east and south, however, the prospect was extremely fine, and as the atmosphere was transparency itself none of the stories relating to the Karroo desert would be exaggerated when applied to Pedra Cravada. In this respect, and the purity of the water, there was no place in the interior of Bahia which appealed to me so much as a desirable place of residence.

From the grass slopes a fine stream had its origin and although at the end of the dry season continued to give some two or three hundred gallons per minute of the purest water, and it was probably due to its presence, coupled with the beautiful prospect that made Pedra Cravada a permanent village. This was somewhat scattered and the houses for the most part built with rough fragments of conglomerate, and anything but uniform in size and height, although they were only four bare walls with an opening for a door. There was an exception to this in the house of our host. It was plastered and white-washed and had windows (no glass) and a store room where stray wanderers were accommodated when in excess of the capacity of the house itself, and as there were only two rooms no more need be said on that score, but it may be mentioned that the Doctor and Senhor Citizen managed to squeeze in, while I had to be satisfied with a hammock slung in the lumber room. I knew that one negro was to sleep there, but failing anything better I said nothing and turned in, but taking the precaution to prop the door open for ventilation. Being tired I was soon asleep. By and by, however, I was awakened by a hand touching me. It was only another stray individual groping for a corner to lie down in, but it effectually roused me, and then I found that there were other three

crowded in beside me as well as a dog or two, so I thought it was time to move. I picked up my blankets and found a place outside with Benito and the pigs. There was at least plenty of fresh air. Even this, however, proved unsatisfactory for as it became colder the pigs began to quarrel as to which was to get underneath for the others to keep it warm. It seemed to be a nightly performance, and according to pig law, was finally arranged and all was still once more. The next time I awakened, a fine misty rain was falling on my face, and so once more I had to change my bed. This time I got under the eaves of the house, but as this area was cobbled to keep the drip of the thatch from washing away the little earth which levelled the front of the house I had some difficulty in finding a soft place, and morning came without my being successful.

Another feature of the big house, or "casa grande" as the natives called it, was a small enclosed garden made with carried earth, and watered from the stream by means of a watercourse, which also served the village. It had some healthy coffee trees producing a portion of the owner's requirements. There, too, were orange trees, a few banana, and pineapple plants, and a number of flowers. Altogether it was a little oasis in a desert place, and the owner was proud of his possession. I only wished that his house had been as large as his garden but not so crowded.

The man himself was as interesting as anything I saw. He was over seventy years of age, but the exact date was unknown, and a few years more or less did not seem to matter. He was as active as the green-tailed lizards that played amongst the rocks around his home, and like them he was small—five feet nothing and merely a few bones covered with a wrinkled parchment. All the same he had beautiful eyes, and was full of intelligent curiosity as to the great world outside which I represented. The trains, the ships, the nations—all came in for his quaint remarks and questions. A Frenchman would have been proud to hear the unsophisticated praise

bestowed on his country, gathered I understood from reading translations of French authors. Nor had I any occasion to complain. The British were the first in wealth and power. Of the United States he seemed rather doubtful, and did not clearly grasp their relation to us or appreciate their influence in the world. The Germans he knew principally through their goods and as these were generally inferior he concluded that the nation was not of much worth. [The incident recorded took place years before there was any suggestion of the possibility of war with Germany.] On all these matters I was able, more or less, to satisfy him, but nothing would convince him that ships were really iron. There was a mistake somewhere, and my confirmation of all he had heard and read did not settle all his doubts, and his final conclusion was that the iron was used in some way to strengthen the wood and protect the ship.

It is difficult for us to understand such an attitude of mind, but we should remember that we have been in touch with the miracles of modern science, and progress all our lives, and while we accept everything as a matter of fact few of us could explain the origin and working details of even a small fraction of them. We see, hear, and utilise all, but let each one honestly ask himself how much he really knows. The result, I am sure, will enable us to appreciate the difficulties of my little old man in his isolated highland home, with a limited education, few books, and no examples to help him. He probably never saw a boat bigger than a dug-out canoe, and the nearest approach to a modern carriage nothing more than a lumbering squeaky country cart with great wooden discs for wheels, and a tree trunk for an axle.

Yet these people are not without talent. In the town of Patacatú in the far West of Minas Geraes I was once invited to the theatre. This had been built by a rich man, and was complete in every way, but what drew my special attention was the stage curtain. It represented the landing of Columbus in America, and seemed familiar somehow. The picture was well executed but the

colours in some cases were not quite right, especially those depicting the sea and the boats. To my inquiries I was astonished to find that the artist was a young man in the town. He never had a lesson in painting, nor seen the sea, nor a ship. His model was the back of an old bank note, and hence the illusive nature of my impression. It was a notable achievement, and those who know most about colours understand how difficult it is to get shades and tints of standard purity from mere descriptions. Anyhow, it made a lasting impression on my mind, and overshadowed everything else, although the occasion was worthy of a permanent record. It was to celebrate some national event. One townsman wrote a patriotic song, and another set it to music of his own composing and taught a choir to sing it. A dramatic club then enacted a tragedy entitled: "Tiradientes, The Martyr of Minas." Not one of them had ever been in a theatre other than their own little building, nor seen a professional actor, yet the dramatic instinct was so strong that all played their parts to life, and so effectually that they held their audience until five o'clock in the morning. Who could ask more?

Pedra Cravada is an insignificant little village, and yet I was told that it had some 200 miners working for diamonds within its "comarca" (district). This term, however, is rather indefinite, and for all I know it included the men working for Colonel S——. The wages were the same (2s.). But it may be noted this is for skilled labour. Labourers only got one shilling and sixpence per day. This is a small sum and in the Lençoes district could not provide anything beyond the barest necessities of life, but in Pedra Cravada provisions were cheaper, for although the surroundings were so unpromising, and the place seemed so isolated, it was in reality no great distance from agricultural lands, and the town of Estiva, and thus the people while as poor as their neighbours further south, were better fed, and as proving this general conclusion, I noticed that their pigs were fatter.

CHAPTER IX

SUNSHINE AND STORM

THE long dry season had become a decided drought, as mentioned in a former chapter. There it was stated that the floating clouds which collected on the Western horizon at sunset gave promise of early rain, but always caused disappointment, as by the following morning they had dispersed, and another diurnal cycle concluded as its predecessor. Towards the middle of December another symptom of coming rain was added to cheer the expectant people. This was lightning flashing through the black vaporous mass, and even distant thunder was occasionally heard, but the wonder was the sunset scenes—the most gorgeous I have ever seen. The Egyptian desert, for example, is famous for its sunsets, but artists can catch and reproduce the beauty and charm. With the Bahian Diamond fields, under the conditions mentioned, this is impossible. Nothing short of a country being consumed in the midst of the most diverse metallic salts could approach the fierce, and apparent incandescence of the strongly contrasting colours shooting through the ragged, slowly changing clouds, and bringing out with startling effect the intense blackness of the whole.

All this the people saw with wonder equal to our own, and agreed it was an exceptional season. What they wanted, however, was rain, and their thoughts were concentrated, not on the nightly pyrotechnical scenes, but on any signs of rain. Every new feature was canvassed with a thoroughness which only those in distress can appreciate, and it was astonishing what close observers

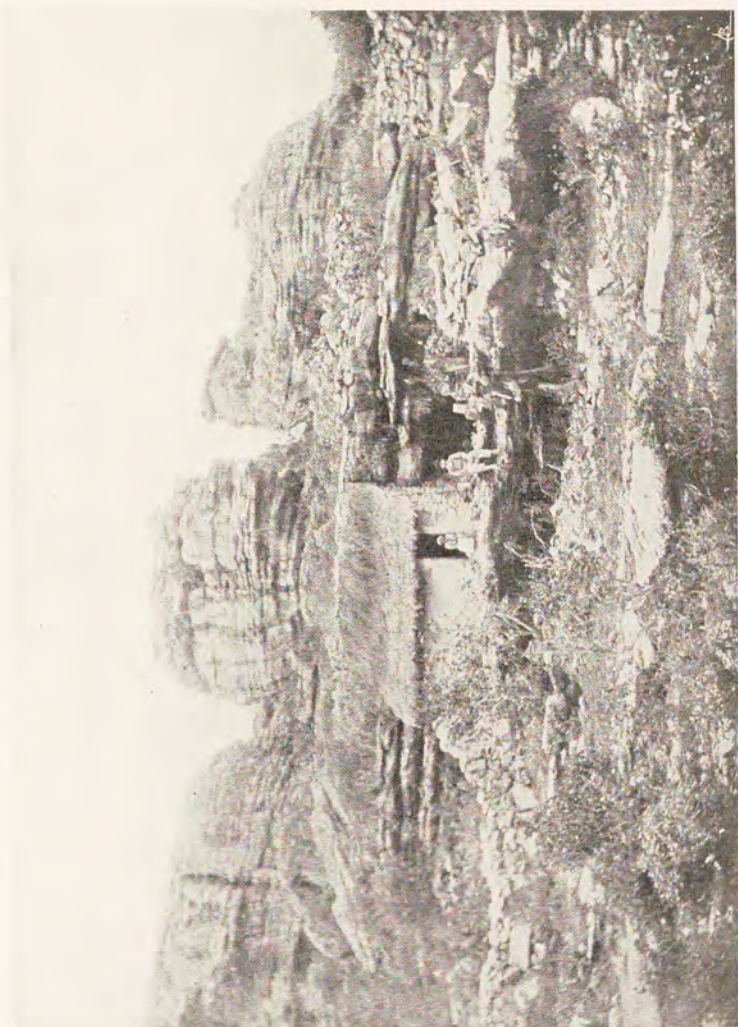
some of them were. Their patience, however, was exhausted, and some began to appeal to God in their distress. The idea soon became general, and it was pathetic to see the earnestness of these rude, profane people. They had no priests, or theologians to help or guide them. They had to rely on their own conception of what was right, and their own resources to carry it out; and these, as can be gathered from the context, were very limited indeed. What a difference their poor procession presented, when compared with those of Spain, under identical circumstances. There the reputed bones of San Isidoro were carried through the streets with all the pomp and glitter of the Church of Rome. But in Marco the only representative of the Church was a poorly lithographed, crudely coloured picture of some saint stuck on a board, and carried in front of the procession as a banner. Those who followed chanted in dolorous voice, for the said saint to intercede for them, and grant them water. As they slowly marched along in their dirt and rags everyone was given the opportunity to salute the banner, and many knelt in the dust as it passed.

As a striking coincidence the day after the first procession, witnessed the real break in the weather, and although the rain was rather a promise than a fulfilment, it stirred the people who had taken part in the ceremony into frantic fervour, and made them persevere with their prayers. And the last time the procession appeared it was a bedraggled, but happy collection of men, women, and children—especially women and children. God had promptly responded to their petition, and they, on their part, had shown their gratitude with an enthusiasm which would have satisfied the most emotional of Welsh revivalists, although he would assuredly have scrupled to endorse their methods, and certainly been horrified at the subsequent disregard to all the canons of religion and good taste.

By Christmas the rain had saturated all gaping cracks in the earth, and filled all the runnels and hollows, while

the rivers from the hills roared in chorus, as their foam crested, mud-laden water dashed over the falls, and through the boulder-strewn gorges, to the placid São José, which nothing could disturb. It simply increased in volume with an all-devouring capacity, and an easy-going speed, which embarrassed the good people of Roncador, and flooded the swampy lagoons, until they became small inland seas. Still there was no sign of cessation. The roads became quagmires in places, and all the drifts were either stopped or dangerous. As for Marco, it could only be negotiated on mule back if one had any regard for their extremities. But this is exactly what the people neglected to do. The falling torrents had no influence on them. The men rolled up their trousers, and the women tucked up their skirts, and went about their occupations with their bare feet, and drank "cacacha" as a preventive to illness. Indeed "cacacha" for the time being monopolised the greater part of their time and faculties, and created scenes which must have raised a sardonic smile on the face of his reputed satanic majesty. These were the people who wanted water, and when they got it as a gift of prayer, as they firmly believed, they turned from it to alcohol. Scene after scene arises before my eyes as I write, but one will be more than enough to illustrate this phase in the lives of these uncultured inhabitants of the Diamond fields.

"Noisey" was the name we gave to a miner who was only sober when he could not get "cacacha," and when in a merely muddled state was amusing, but a greater degree of inebriation made him quarrelsome, and as he was well known people humoured, or avoided him, according to circumstances. But in the rejoicing at the double event—the coming of rain and Christmas—drinking was wide-spread, and all were more or less under the influence of rum. Hence when "Noisey" staggered on the scene there was the promise of some excitement. He went through his usual pantomime and his neighbours laughed, but getting drunker his mood changed, and before we realised the cause of the trouble he was roaring



TYPICAL SCENE IN DIAMOND FIELDS, SHOWING MINER'S HUT BUILT
CONVENIENTLY CLOSE TO HIS WORK.



like a madman and swinging his old muzzle-loading pistol about in a reckless manner, and threatening to shoot the whole village. Topsy as his companions were they hastened to a safe distance, and from that vantage, pelted him with abuse, and one or two even added mud. A woman, however, worse than the others defied him, and lashed him with her tongue until her son fearing the consequence risked his skin to get her under cover. As it proved there was no danger. With one of those peculiar twists of the drunken mind "Noisey" only laughed at her, and to our astonishment produced a writhing snake from somewhere, and tried to frighten the Amazon. After she retired he began to chase those who had been tormenting him beyond the reach of his fire-arm, while the snake struggled to escape. This called for attention, and he heaped upon it all the curses of an ample vocabulary, as being the offspring of the evil one; struck it with his pistol; swung it about him like a whip; and finally put its head in his mouth and bit it in his frenzy. We were both alarmed and disgusted with the exhibition, but the natives only laughed, and enjoyed the fun. They evidently knew that the luckless reptile was harmless, and were accustomed to scenes of violence. In the midst of their merriment "Noisey" made a sudden rush and hurled the snake amongst them as being a near relation, and, turning his back on them, staggered away to Mosquito.

To show that these scenes of pandemonium did not always end in this ludicrous manner, I may mention that "Noisey" ultimately stabbed a half-witted negro who had attached himself to our kitchen, and as a consequence had to take a hasty departure to an unknown destination.

Nor on this occasion were they content with spending their own substance in riotous living. They did their best to waste that of others. This was done according to custom, and this, no doubt, had its origin in the same source as our carol singing at the approach of Christmas, only in our case the practice is confined to children seeking pennies, and singing sweet songs of promise. But

with the people of Marco, it had degenerated into a bacchanalian display, extending to some ten days. A band of men and women collected in front of our door at almost any hour of the twenty-four, and commenced to play a heterogeneous collection of instruments, and sing doggerel, until we were glad to give them some money to get them to go away, and the only compensation was the good-natured way in which the robbery was conducted. There was no escape. They came again, and again, and so we were thankful when the New Year was fairly on its legs, and our thoughtless neighbours had no further excuse to continue the "festa" (feast).

The festival had stopped, and the men had returned to their work, but the rain continued. Now, however, it was nearly always moisture laden and made everything damp. Even our blankets were affected, and being confined to our quarters our health suffered. None of us were actually laid up, but we were all languid, and without any desire for food. Poor old Ceripião seemed dirtier than ever, and as his special efforts were not appreciated, he was as heart-broken as the rest of us. The people themselves did not entirely escape. There were a number of cases of malarial fever, but these were mild, and not looked upon as anything to worry about. Strangely enough toothache was almost universal and coughs became prevalent. Indeed, this malady forced me to realise that the greatest enemy of the inhabitants was consumption. In the dry season with the pure bracing highland air none but the very worst cases were suffering, but the moisture, and uncomfortable conditions generally, increased the number as far as the casual observer was concerned. I remember one day during a sunny hour taking a stroll and coming upon a poor cripple sitting by the roadside coughing with the tears running down his cheeks, while he convulsively grasped his crutch to steady his shaking frame. For him there was no sanatorium, or hope of any kind. He was simply in the way, and his burial would relieve some corner of an encumbrance.

Towards the end of November the heat became oppressive, although the temperature was not really high. The greatest shade temperature was 90° Fah. But after the rain it became less, and the highest for the following month was 89° Fah., and this only one day—22nd December, and strangely enough it was also the date of the lowest reading recorded for the month— 77° Fah.

In January the variations were less. On the 9th the three readings for the day were the same, but the greatest difference during the month was only 10 degrees. The general average, too, was less than the preceding month, being 77° Fah., against 79° Fah. Under ordinary climatic conditions this would be considered ideal, and no doubt explained the low mortality amongst the people. At the same time we occasionally complained of cold and were forced to put on warm woollen under-clothing.

Luckily the rain abated about the end of January and the sun came out with reviving effects. It soon chased the mist from the hills, but it caused the valleys to steam with unhealthy exhalations. In these circumstances, and in view of our failing health, stimulated by business reasons, we took a trip to the coast. When we returned to gather up the concluding phases of our investigations we found that the rain had again become general, and the rivers were in flood. We could not cross the São José and were forced to take the western road along the base of the bare grey sandstones, and make the best crossing we could of the turbulent hill streams. The Mosquito proved the worst, but there was really no danger, and as our destination was near we did not mind a wetting.

When we reached Marco we found it was not the same. It was scarcely recognisable. The white-washed mud had fallen from portions of most of the houses, exposing the posts which formed the basis of the majority of the structures, but the most extraordinary feature was the entire absence of foundations other than the bare poles, and the line of erosion was as remarkable as any other point in this strange transformation. It would be

about a foot from the ground, and one could sometimes see the feet of those moving within the houses. For a time we failed to understand the situation. There had evidently been heavy rains, yet after our experience we never imagined there could be anything worse in store, but there was. A rain cloud had burst somewhere in the vicinity of Capão Preta, and sent a wall of water down several hill streams, and in none worse than the Mandasaia. There it overtook, and drowned two women, and carried away their habitations, while it flooded the valley of the São José to such an extent that Marco was soon standing in a foot of water, and it was this which played havoc with the wattle and daub houses of the people.

The destruction, however, was more apparent than real, and the people were only waiting for a spell of sunshine to repair the worst part of the damage. In the meantime there was no hurry. It was not cold, and as long as the rain was kept out, the openings provided free ventilation, and probably assisted in maintaining good health in the village. In any case our house was not damaged, and we had no such luck with regard to health. The old symptoms returned as time advanced and became more pronounced in the case of my companions. This I think was in a measure their own fault. They insisted on securely closing the doors of their sleeping rooms, and as these rooms were inside, and had damp earthen floors, and no windows, were badly ventilated, and bound to be unhealthy. In my own case I risked personal attack in spite of the Doctor's repeated warnings of the danger, and kept my window open, only not wide enough to admit illegal entrance of some adventurous spirit on mischief bent. Of course this was no protection against stray bullets, and one night I got a fright which spoiled my beauty sleep. Bang! Bang!! I tumbled out of bed in a hurry with the impression that I was under fire, but after collecting my senses I discovered that the fusillade was on the other side of the street and had nothing to do with me. All the same I restrained my curiosity, as did my friends, who came running to my assistance, until

morning when we found that it was a "feu de joie" at the birth of a son to our milkman. That it was midnight did not seem any reason for delay in giving expression to the sentiment of the happy parent. Notwithstanding such a rude awakening the advantage to me was decided in the better state of my health, and as subsequent events demonstrated was a good thing for all concerned.

Fortunately the weather improved, for although it was still the wet season when we left Lençoes about the end of March, the rain only came in spells of two or three days at a time, with sunny blinks between, and generally without the penetrating dampness of the earlier part of the season. Indeed, the rain seemed to clear the air and make it cooler for a time—till the clouds again became charged. In the dry intervals we made a number of minor excursions, but none of these added to the interest, or knowledge of the district beyond geographical details, and these are given in the map. Hence I need not detain readers further in this direction. But I may say that we paid a number of farewell visits to friends we had made in the place, and these social reunions were pleasant breaks in our rather circumscribed existence, especially as Clarke was often laid up. And my anxiety was increased by seeing the Doctor visibly failing, nor was my own condition improving under the *régime* of Marco.

On one of these social visits the Doctor drew my attention to a small bouquet of flowers on the table. This in itself was so unusual that I was observing the fact before the Doctor spoke, but was not prepared for the explanation. It was an auctioneer's token. It seems it is the practice when an individual is successful at a public sale to receive this floral tribute as a sign that the bid has been confirmed. In the case in point it happened to be a diamond lot that had been acquired. This raised the question of legal forms in practice in the Diamond fields, and I was glad of the opportunity of having the position discussed by people whose statement could be relied upon. This was all the more desirable because of the difficulty of getting documents on the subject.

The law of the State of Bahia relating to diamonds is said by some to be a contravention of the General Constitution of the Republic. This may be so. In any case it forms a great contrast to the State of Minas Geraes, where private property carries all the wealth it contains. But in Bahia all diamond bearing lands are under the direct jurisdiction of an Official Department, and none, not even the landowners, are allowed to search for, or work for diamonds without express permission. On State lands every facility is given in the way of land, water, and timber free, provided the latter requisites are to be found on such lands. In the case of private estates, however, everything has to be bought at a recognised price, and all damage paid for, but otherwise there are no restrictions, unless, the area surrounding a house, an orchard, or some other special feature that has permanent value greater than any other consideration. Water, too, can only be used under an arrangement which does not prejudice the productivity of the estate either as to crops, or the watering of cattle.

This seems to be reasonable, and causes no trouble. The difficulty lies in the injustice of the general law. The Diamond fields, as must be abundantly clear from what I have written, is a sterile land of practically no value for either pastoral or agricultural purposes. Hence the Government in arbitrarily taking over the diamonds take all, and leave the unfortunate owners without an individual right, because where such large areas are recognised as diamond bearing they are continually overrun by prospectors in search of what may be the richest parts, and as these are often the valleys, the concentrated areas, they coincide with the deeper soil, and more fertile portion of a man's inheritance. The recognition of this forces the most judicious into a false position, and land is destroyed for a speculative value which forfeits the steady annual income from a productive field. As illustrating this point I may give an example. I was the guest on a "fazenda" of which the occupier was the owner. It was a valuable possession producing sugar,

coffee, tobacco, cotton, maize, mandioca, etc.—all on a small scale but demonstrating what could be done. There, however, was an eye-sore—a continual cause for lament by my host. This was the destruction of some hundred acres of the most valuable land on the estate by his grandfather in the search for gold. All round the margins the soil was deep and black, but in the worked portion there was only weeds on a red clayey decomposed schist. What made the matter all the worse to bear was the knowledge that nothing had ever been made by the sacrifice. The nature of this can be understood when I mention that numerous samples tested established the fact that the destroyed soil had a very low value—the samples tested only gave a little over a farthing per ton. This was not on the Diamond fields, but it is an emphatic example of what is going on daily. Few men are stoic enough to remain uninfluenced under the accumulating wealth of a neighbour, and sooner or later he will make the plunge, pay his money, and begin to explore his own land to the neglect of his legitimate business, and as usual in a highly speculative undertaking the process keeps him as poor as a church mouse. The lucky rewards are for the few, and the Government reaps no material benefit from this short-sighted policy. If it left the owners to negotiate the right to work for diamonds on their own lands as best they could, or according to their own convenience, they would have the positive advantage of such an arrangement, and the money liberated would be available to improve the estate and increase its productivity. But as one owner whimsically said: “Unless the landowner is prepared to pay a certain amount of money to the Government he is theoretically debarred from turning up the soil on his own estate, and if he ventures to erect a fence and digs up a diamond in placing his posts he is contravening the mining law.” This amusing criticism contains an element of truth and shows how the question is looked upon by those principally interested. But Bahia goes on its way irrespective of logic or common sense. The law does not affect

foreigners provided they recognise the original injustice, and tactfully work with the landowners.

In the administration of the general law we have just discussed the State is divided into fourteen districts, and application for lots or concessions must be made at the office of the district. The procedure is to select the area desired and should it be open for acquisition the boundaries must be clearly defined in terms which can be recognised and located by interested parties. As a matter of practice this is done within such limits as leaves a good margin in favour of the applicant, because it is easier to deduct from rather than add to later on should the legal limits be imposed. Armed with his data the applicant goes to the administrator of his district and states his case and presents his facts. When this has been done the administrator issues a notice that such an area, defining the boundaries, has been applied for and shall be given to the applicant at the end of thirty days provided no opposition is offered. This opposition may be of two kinds. One disputing the boundaries as encroaching on another lot and calling for readjustment, and the other a case of competition, but whatever they are the petitions must be lodged in writing within the time specified and then a day is set apart for an auction after all other causes of dispute have been settled, and the lot goes to the highest bidder irrespective of nationality (represented in the case of a foreigner by an Agent) but with preference to the owner of the land provided he is prepared to accept the position of the highest bidder.

The limits as to area of lots range from 29,000 square metres as a minimum, to 484,000 square metres as a maximum. The lowest sum at which transfer can take place is two reis per square metre per annum, and in the case of competition it may be much more. The only additional tax on this is ten mil reis per lot irrespective of size for municipal purposes. Apart from these taxes the municipality, which means a district, imposes a tax on individual miners. This is rather in the nature of a license to keep a record of the number of men employed

in the district, and in return the men have the right to search for diamonds on State lands until such time as the value of such work has been proved, and so long as there is no rush to a place individual miners can and do go on indefinitely. They are merely considered to be prospecting, and "fiscadores" as distinguished from "garimpeiros," can also extend their tentative operations to private land which is not licensed, but as a matter of diplomacy they seldom do unless in the wilder and more isolated regions and these are often worked by fugitives from justice.

To completely answer this question of taxes, it is necessary to add that there is an export duty of five per cent. on the value of the diamonds and carbons exported, but it is suspected that occasionally both diamonds and carbons leave the country without having the courage to face the Customs Officials. This, of course, is merely rumour and very likely is a slander on the good names of honest traders.

It must not be assumed that the "tertulias" (social reunions) were our only means of relaxation and amusement. The children were a continual source of pleasure. I have already mentioned their "writing" and playing in the mud. This was not as disastrous as one would think. They had little clothing on and it seemed quite natural to see their small brown bodies, and their roguish laughing eyes and merry pranks made one feel inclined to join in the fun. They had few set games which I can recall but they were never at a loss to keep the fun going, and when they were tired any shady corner was a convenient sleeping place. Any toys they possessed had to be improvised by their elders, or made by themselves in imitation of what they saw. I have beside me a pistol made by a boy of eight or nine years of age. The stock is made from a knotty bit of firewood, and the barrel is a brass cartridge tied firmly to the wood and having a hole punched with a nail (a stone for a hammer) at the closed end. With this crude production the boy was busily engaged firing at his companions who were enemies

for the time being. The powder was no doubt pilfered from his father's supply, and a fire-brand did the rest. The report was too loud for my comfort so I captured the artillery and took both armies prisoners and brought about a lasting peace for a few pence.

The same boy was a most interesting study. He was brown to copper coloured with lank black hair, and a chubby face recalling the angels of the early Italian artists, but his character was too complex to be easily analysed. In the above episode we have him as ring-leader in a childish game of make believe. At other times I have found him wandering alone apparently absorbed in some passing fancy too deep to be shared by his companions or explained to his parents. On one occasion he accompanied me on one of my minor excursions. In passing under some overhanging rocks we disturbed a colony of hornets—fellows peculiar to Brazil, and about an inch in length and a perfect terror. I was leading and managed to escape before we knew of their presence or that I had annoyed them, but the unfortunate boy got a sting on the thigh. He never whimpered or gave a sound, and yet before we reached home his leg had swollen to an alarming extent, and the next day he could scarcely walk, but philosophically said he might have been stung by more than one "mirabanda" and that would have been much worse. Here we have in this small person the characteristic manifestation of the mingling of blood—white, Indian, and negro.

Game was very scarce and birds not at all well represented, but the villagers possessed a few common green parrots. These were the fast friends of the children, and would often fly to, and obey them when they refused to move for grown up people. One especially was quite a rebel in this respect, and every evening it was amusing to see a little girl looking for, and calling on her pet before going to bed, and on finding it taking it home on her shoulder while it sagely repeated "vamos embora" (Let us go).

Even our own difficulties and infirmities were used as

a weapon to poke fun at each other. On one occasion when Clarke suddenly appeared from his room dangling a dilapidated garment we could not help laughing at the amusing spectacle, and yet it was no laughing matter. We all suffered from the same cause, but due to a peculiar circumstance I had escaped from the one that made my friend rage in *déshabillé*. To understand it is necessary to explain the process of washing. The women rub and pommel the clothing on a stone and at a certain stage of the operation they swing the linen round their heads and come down on the stone with a whack corresponding to the size and weight of the garment. This is done repeatedly until they are satisfied that the cleansing has been completed. Cheap cotton goods used by themselves have little weight and are easily washed and hence suffer little, but with our heavy woollen garments the case was different, and as the material was new to them and their reputation at stake they made sure that all the dust and perspiration were removed but with ruinous results to the garment. My escape from this destructive cleanliness was in having fine silk shirts which on being wet had practically no bulk and consequently could not easily be beaten on the stone, but in any case they looked so fragile that they appealed to their obtuse faculties and the nett result was that I left the district with my silk shirts practically as good as when submitted to the tender mercies of the "lavadoras" of Marco.

Notwithstanding every means of spending the time of enforced idleness we were anxious to get away, and this was becoming more and more pressing as a precautionary measure against a dangerous illness. For some time Clarke had been under medical treatment, and this apart from being costly was not satisfactory, because the doctor said there was really nothing the matter—he was only run down and required a tonic. This tonic was expensive patent medicine and made a heavy addendum to the doctor's fee. Hence discretion was the better part of valour and expedited our departure at the expense of other considerations. On the morning we were to leave

Clarke had a relapse and was quite unable to ride. This was unfortunate as the mules were at the door, and consequently I had to make up my mind at once. Every feature of the case prompted me to fly and I did. I gave orders to load the mules and sent a hurried message for carriers. These were quick to respond. A hammock was fixed on poles and Clarke installed, and the weary march to Andarahy begun, with myself as commander-in-chief. The Doctor remained behind to see that the mules were properly loaded, nothing left behind, and all accounts paid.

It was an undignified departure but I still think it was a wise one. The end of the wet season is always the most unhealthy part of the year in a hot climate, and when the situation is low lying and been subject to flooding and stagnant water the danger is all the greater, due to the powerful effect of the sun on effete matter left by the receding water, and, of course, the propagation of mosquitoes. Marco fulfilled these conditions, and while a continued stay may have proved nothing more than a temporary loss of vitality and a gain to the doctor's income it might have ended fatally. That this is no mere fancy is proved by the fact that it was publicly reported after we left that a rich young merchant from Rio de Janeiro had lost his life when visiting the Diamond fields in the vicinity of Lençoes. In making these observations I do not wish to frighten intending travellers but only to give a useful warning, because I am convinced that the region as a whole (away from the river swampy areas) is exceedingly healthy, and that with ordinary care to meet the requirements of the climate, proper food, and comfortable house accommodation Europeans would enjoy good health all the year round.

CHAPTER X

CUT AND RUN

THE march to Andarahy was a trying experience. Clarke groaned, the men perspired, and I sizzled in the sun's powerful rays as hour after hour we plodded on with funeral pace. It was three o'clock in the afternoon when we reached our destination, and found the mules had passed us on the road (the carriers took a near cut), and were unloaded, and the Doctor in his bed, Benito down with fever, and Ceripião in a drunken sleep. The only one to receive us was a hired man who had sometimes acted as guide for me, and instead of the men getting anything to eat they had to go and look for it and cook it themselves. After seeing my friend to his camp bed I slung a hammock in a convenient corner and had a sleep as a preliminary to tackling the accumulating difficulties, as I was fairly worn out by the long creeping ride under the fiery conditions of a storm-laden sun.

In the cool of the evening I paid the carriers, and by giving them a few extra coppers for their increased labour sent them away as merry as school-boys at the close of the session. The mules were my next care, because transport animals are the very breath of life to travellers under circumstances similar to our own. I got the same pasture as on former visits, but since the rain the grass was long and luscious, and the mules were soon enjoying the feed with heads down and tails in continual motion to keep the numerous pests at bay. The cost, however, was high—a shilling per day for each animal and as we had eleven the prospect of a long stay was not cheering, but what was worse, the pasture was so

small that it would only last a few days. Still there was no great reason for worrying. "To-morrow the sun may be shining, although it is cloudy to-day." In other words, my friends might be able to resume our interrupted journey before the necessity of considering the future needs of the mules arose.

By sunset Benito was much better, and Ceripião had so far recovered his senses as to be able to tie a coloured hanky round his burning brow, and as he proceeded to make some food suitable for the invalids kept swearing by all the gods of his fathers that Lençoes was no place for a Christian man. Even the pigs of his native place would be ill under the conditions in which we lived in Marco. "Chacacha" was not the cause of his suffering. Oh no! It was fever, and I ought to know him better than believe that he would take too much on such an important occasion, and, although I was so hard on him, he considered it was a blessing that I had escaped.

Leaving the diplomatic old sinner to his duties I turned my attention to my friends. The Doctor did not complain of any pain. He said he was simply tired and a little giddy—a touch of the sun he thought, and urged me to leave him to rest while I did what I could for Clarke. This gentleman was really very ill, and I would have been surprised had he been anything else after the rough usage he got over the rocky road, especially the latter part, when he was sometimes bumped on the boulders. It was quite certain he would require two days' rest at least before he could proceed, and it was necessary that the question should be definitely settled whether he could go on with me to the City of Rio de Contas, or return to the coast and England. Andarahy was the parting of the ways.

When free I commenced to utilise my time to the best advantage in seeing the town and its surroundings. In this, however, I was hampered by the heat. It was greater than anything I had hitherto experienced. The season of the year no doubt had something to do with it, and the town being situated in a rocky depression made things worse.

The bare rocks radiated the heat, and became so hot that one could not sit on them until the sun had long passed the meridian. Notwithstanding this a rocky ridge in front of our temporary abode was a favourite seat of mine, because I could see the door and receive signals, while having a fine view of the valley, and at the same time enjoy any slight breeze which happened to be on the move.

One of the finest natural features of this panorama was two imperial palms. They were growing in the grounds in front of the house of our benefactor. Like the soil the trees came from another place, and as they were the only specimens I saw in the interior of the State their presence and success in the sterile valley of the Andarahy was all the more remarkable. They were over sixty feet in height and had a smooth stem transversely marked at regular intervals with the cicatrices caused by the fronds which fall as the tree grows, but ever keeping a wide spreading crest of dark green foliage through the centre of which rises a great spike like a miniature flagstaff. This is the sheath from which every frond comes, and as it matures falls into position on the top of its predecessor, while a wornout member drops below, and so the spike leads the way into the upper air and the trees grow. I have seen many varieties of palms in different parts of the world—the cocoa-nut palm that waves with the “spicy breezes” that “blow o’er Ceylon’s isle,” and sat under the date palm in the fertile valley of the Nile while an agile brown skinned boy climbed his particular patrimonial tree and handed me some of the nutritious fruit; struggled and tumbled in a Bornean forest amongst the complicated twists, loops, and never ending festoons of the rattan palm as it fought its way to the upper air, and adorned the forest roof with tufts of feathery green—beauty and utility in every case, but none of these, nor the mental picture they create, can erase the impression of majestic beauty of the lonely imperials nodding to each other in the unpromising surroundings of the Diamond fields.

Another object of interest seen from my point of vantage was a kind of shrine having a great cross in the

centre and illuminated at night by two lights set on white washed pillars. It was situated on the brow of the soil-covered hill to the east of the valley and overlooked the town. This custom of erecting crosses in a commanding position in the vicinity of a town or village is wide spread in Brazil, but it is seldom made a devotional centre as well. In Andarahy, however, all the time I was there it was well patronised and showed a degree of religious life in striking contrast to Lençoes. But it is only just to notice that being conducted in the open air instead of in the church attracted more attention. The devotees were more numerous after sunset and made their presence known not only by the lights they carried but by sending up many rockets which burst with a flash and loud report, and reverberating amongst the rocks on the opposite side of the valley. This combination of fire and worship astonished me, and I was never satisfied with the explanation offered to account for the practice, and came to the conclusion that the church tolerated the noise because everyone loved fireworks to an inordinate degree, and concluded it was better to accept the innovation rather than lose its hold and influence over the people. In this they were probably wise, but in any case it was the easiest policy to pursue. Yet I am under the impression that it had reached a degree of supremacy in the service that would have shocked the easy-going fathers who accepted it in the first instance. I was informed that the preacher never used the name of any of the members of the Trinity without a rocket—a fiery hallelujah.

On one occasion I was passing through a village on a borrowed horse. It was daylight. Suddenly from amongst some trees a rocket shot up with a loud bang, startling both rider and horse. For a few minutes I lost control of the animal as it galloped through the village with the bit in its teeth, but I returned to investigate. It was a small church and a man stood outside with a number of rockets in his hand. It was evident he was listening to the service, and his office was to send up the rockets as the occasion demanded.

That was the religious side of the fireworks, but no event of importance, private or national, is allowed to pass without this form of amusement, and when there are no rockets or other form of fireworks their pistols and guns serve the purpose. The little square in Andarahy, as other public places throughout the interior, become on the celebration of historical events a centre of noisy patriots sending up rockets, and the louder the noise and the higher they go the better pleased are the crowd, but the falling sticks are a source of danger, and it is safer to keep indoors on such occasions if not at the firing centre.

At the opposite end of the town from my perch was the church, and although too low-lying to be a prominent figure on the landscape is worthy of notice because of its modest proportions and humble appearance. A high, white-washed wall surrounds it and the cemetery, which is also of limited proportions. It may be too much to say that the church is the highway to the cemetery, but the same gate-way in the wall served for the living and the dead, and while the limited accommodation of the church may have caused no inconvenience to the community of some 4,000 to 5,000 inhabitants, the area of the burial place left something to be desired. To meet the immediate wants, however, both of space and purse the bodies were placed in shelf-like recesses placed round the high walls. The payment of a little extra cash ensured a safe abode, sealed, and having a tablet giving name and virtues of the occupant with the date when activity ceased. But a lesser amount of money only made the niche a temporary resting place, and then a common fosse took over the responsibility and in doing so economised space. Travellers are very likely to observe that Andarahy is not the only place where this system is practised and with infinitely less justification.

One evening, after taking a short walk I had just gained my favourite seat when my attention was attracted to the house by a penetrating hiss (a Brazilian method of attracting attention), and a sign that I was wanted. Responding at once, I was surprised to see a stranger

with the Doctor, and my feelings can better be imagined than explained when I discovered that he was a countryman—a Canadian. He was passing through Andarahy and by mere chance learned that there was an Englishman lying ill in the town. In calling he found the Englishman, but was astonished to find the Doctor, a friend of his own, also ill. Even in the presence of sickness it was a happy meeting, and to Clarke and myself the making of a friend was a pleasant event—a friend in need is a friend indeed. His cheery influence on the invalids was astonishing, especially when they learned that I had persuaded our friend to join our party and share our fortunes. It was certainly an unexpected stroke of good luck. In addition to being a good nurse he was familiar with malarial fever, and was able to state definitely that although their temperature was high it was not that malady from which our friends suffered. It was something more obscure and puzzled us all, but as they were on the mend we did not worry very much about what seemed a thing of the past. We, however—that is Mr. Girdwood and myself—took advantage of their convalescence to continue our peregrinations in and around the town with the help of my new friend's knowledge of the district to make them more interesting.

Our first outing was to the Corrego dos Pobres (Stream of the Poor) so named, I suppose, because a large number of very poor people lived along its banks, and earned their living by washing clothes in the pure water which came tumbling from the highlands on the west, and only reached the level stretch in which the washing was done after forcing its way under great masses of rock and through cracks in the polished conglomerate which barricaded the base of the escarpment.

Our approach was from the north, and the town was hidden by barren ridges of rock, but by going a little to the west and climbing to a point of vantage the scene was extraordinary in its rugged outlines and the exceptional appearance of the town. The central part was fairly homogeneous, but on the outskirts the houses

seemed to have struggled for the same sites as the jutting masses of living rock, but with indifferent success, and in abandoning the contest had conformed to the inevitable. The rocks dip steeply to the East so that their eroded edges stand up to the west, and it is their endless diversity of form and fracture that meets the eye on all sides. What increases the effect is the transverse opening through which the stream Corrego dos Pobres flows. Along its gurgling edge women were busy washing, while all the available boulders in their vicinity were white with drying clothes. Their huts and living places were situated on the rocks above, or leaning against them, between them, or under them, in a most bewildering manner. They occupy every conceivable position and there is no limit to the style. It is without art and recognises no law but utility. If the opening is horizontal the sides are built up and a space left for going in and coming out; if vertical a roof is put on and an end built up; and, if inclined, a lean-to has been erected. The material used was as varied as the circumstantial position of each hut. Sticks interlaced with reeds; wattle and daub; and stone with red earth as mortar, or a combination of two or more of these, complete the architectural efforts of the rock dwellers of Andarahy.

I could not help thinking that they must have developed a most unusual set of muscles to enable them to climb and jump among their rocky homes. Homes! This is a misnomer. The places were cheerless and without comfort, and without the sun would have been hopeless misery.

On descending from the point where we made the above observations we found we had been standing over an irregular series of these same semi-cave dwellings, and been under the scrutiny of four dark eyes and two wide open mouths armed with excellent white teeth. The tense gaze of the two women squatting on the ground was a measure of their astonishment at our unexpected presence over their heads. In passing we saw all that was to be seen in their shelters, and that was not much. There was in some cases a coloured woman sitting in the

shade making lace. The bed was merely a few sticks on some stones in a corner and covered with a grass mat, but, as often as not, it was only a collection of reeds. A tin pannikin or two for drinking, and an earthen pot for cooking completed the outfit unless for a few worthless articles sticking here and there in the cracks of the smoke-blackened rocks. More than once a small group of scantily clad gossipers turned and gazed at us with interest as we passed, and then burst into loud and merry laughter at our clumsy progress among their unique surroundings. (They always had bare feet and this polished the rocks so that our boots kept slipping). In this hilarity they betrayed their negro origin rather than their Indian blood, although the most of them were a complicated mixture.

In the stream our presence caused a flurry of excitement and frantic haste to hide or don some additional sort of garment. The "lavadoras" did not mind their friends and associates, but white men were different, and foreigners!—that was terrible, and once the first shock of surprise was over they were inclined to be indignant at our unconscious rudeness by appearing amongst them without warning. We laughed at the ludicrous scene and chatter, but all the same we lost no time in making our escape. On returning to the town we found that the Corrego dos Pobres was also the source of the town's water supply by meeting people out for water in all sorts of receptacles, especially old kerosene tins. A more pure and delightful water it would be impossible to imagine. There was practically no vegetation on the hills where it had its origin, and the siliceous rocks without minerals or salts of any kind kept it pure, while the falls and rapids broke it up and aerated it in such a thorough manner that it made a delightful sparkling domestic supply.

Another trip was to the Paraguassú River, where it came through the cañon in its course from the highlands of its birth to the lowlands below. The gorge was interesting enough and locally famous, but to a traveller of a wider experience there was really nothing great or imposing in its appearance. What struck me most was



AN OLD DIAMOND WORKING.



the smallness, insignificance even, of the river. It was no bigger than some hill streams of the British Isles. This was disappointing in such a famous river as the Paraguassú, less than 200 miles from its entrance into the Bay of All the Saints, and with such a wide and beautiful estuary. In fact, it was of less importance as a river than its largest tributary—the San Antonio—which joined it a short distance below its dash from the highlands. It, however, like the scorpion has a sting in its tail.

The great rolling lands where it has its source, are sometimes subject to heavy rains when there is scarcely a cloud to warn the people on the eastern side of the gorge that there has been a storm, and occasionally the first intimation they get of the fact is the roar and rush of the rising river as the water thunders through the divide. Just as it emerges into the opening of the valley there is a large pool with a rocky edge so regular that the water slips over it as smooth as a mirror. Behind this barrier the water is deep and supposed to contain great wealth in diamonds, and many a one has stood and pondered on the possibility of getting at them. Girdwood was no exception to the rule and was anxious to get my opinion as to how the thing could be done safest and cheapest. I am afraid my answer was not very satisfactory. I was there to see and learn and I did both.

It seems that some Europeans—or were they Americans?—built a raft on the pool and began with a diving suit to explore and exploit the hidden depths. But one night they were awakened by the alarming roar of the river in flood. In the darkness they could see nothing but the faint outline of foam and rushing water high above where they had anchored their raft and diving outfit. In the morning the river was found to be about twenty feet above the level of the previous evening and all trace of their gear was gone and so were their hopes of wealth from the depths of the Paraguassú. The sting in the scorpion's tail had frightened them beyond the power of further efforts.

Once, however, it had passed the lip of the great pool—that is, at the mouth of the cañon—its power of destruction

was practically finished, because as it tumbles down the remainder of the hill it opens out like a fan and becomes quite shallow unless in the case of the greatest floods, when the drift on the road between Andarahy and Cheque Cheque becomes impassable. As for the valley itself, it has great power of retaining and checking enormous volumes of water without damage and, indeed, without creating any great current in the direction of the main drift—that is, towards the coast. Yet its course can easily be detected as it forces its way through the stagnant but ever varying flood. Into this same valley the Andarahy flows and so does the Piaba coming from the direction of Cheque Cheque, and their united waters added to that of the Paraguassú in the wet season makes this depression at the outlet from the highlands a respectable sized lake and at such times effectually checks all communication with the rail-head at Bandeira de Mello.

Something of this I saw earlier in the season, but at the time of the visit I am discussing the valley was dry and what impressed me was the large scale upon which concentration must have taken place. Indeed, there is no locality in the whole of the Diamond fields at all equal to it. Its wealth is traditional and the owners speak of millions and probably they are right. In any case it is a practical speculation when we remember the actual wealth recovered from less promising areas. Here the Paraguassú has been forced to abandon the material transported from the highlands with the diamonds it may have collected *en route*. Some assert that the gems found as far from the recognised source as Tamandua were carried over the tranquil stretch of water, but I have very little faith in such an opinion. It is more likely that a fuller knowledge of the district would reveal the fact that they came from a region much nearer their present resting place. Even assuming that some do escape this natural catchment area they are but a small proportion of the whole.

The same argument applies to the Andarahy and Piaba and minor streams that flow into the depression. Then we have to add the concentrates from the actual area of

the valley itself, and, consequently, it is a question for imagination rather than figures. But by way of illustration, if we only assume one carat to ten cubic metres of the original strata and make the length of the valley 3,000 metres and 1,000 metres wide with sixty metres denuded and washed into the present river system we get no less than 18,000,000 carats. The calculation, I know, is worthless, but it is a concrete example of what I am trying to explain. And I may add that some such method of computing values has been accepted by long-headed speculators who have tried to come to terms with the local owners.

Not long ago a gentleman from New York came to my office and wanted to know if I was the author of "The Diamond fields of Brazil," a paper read to the Royal Society of Arts. I answered in the affirmative and waited for him to explain. This he did by saying that he had been to Andarahy and had secured an option to purchase the right to work this valley we have been discussing. When he returned to New York he hunted everywhere for information and found it scarce. At last he came upon my paper in one of the libraries of the city and was so pleased with the accuracy of my map that he guessed that the other features of the paper were likely to be also reliable so he decided to call on me when he reached London. Now he had done so—laid his cards on the table—and hoped that I would help him. He wanted money—a lot of money—to develop and work the deposits, and get the fabulous wealth that he believed existed in the area of his choice. Naturally as a professional man I was willing to assist. I was introduced into a luxurious West-end (London) office and invited to state the position and probable results of exploitation. I did so in the sense given above and all were enthusiastic. But when I came to the actual engineering problems I felt the atmosphere getting colder until I was frozen out of the office. I came away with the knowledge that my American friend and his friends, especially his friends, wanted a gilded pill for somebody else to swallow. At that stage of their financial operations they did not want

to know the difficulties which had to be overcome, or at least wanted to be sure that the man who was advising them would keep his mouth shut till they had got their cash, and then the remaining facts could be disclosed to the unfortunate victims as unsuspected difficulties.

In describing the sudden flooding of the valley and its low-lying nature I have prepared readers for some of the problems that have to be overcome. But in addition to what has been stated there is the accumulated sands of over fifty years' washing carried into the hollow and left there on the top of the natural over-burden, so that the quantity of worthless material to be handled is very great. This, too, is waterlogged—in other words, running sand, and hence to get down to the rock bed and diamond gravel in the presence of a river like the Paraguassú and its tributaries is not an enterprise to be lightly undertaken, and, as a matter of fact, has hitherto prevented even the most daring from trying their luck. Of course the job can be done, but the question still remains, and always will remain—What is likely to be the return on the money spent? My New York client and his London friends can think it over. In the meantime there is no harm in suggesting that if Andarahy were more enterprising the power which is going to waste could be utilised for lighting the town, but failing that, the energetic gentlemen mentioned may be able to incorporate this motive power into their scheme once they get the capital.

By the time our itinerary was finished our friends were ready to make a move. Clarke was in exuberant spirits at his rapid recovery and the prospect of our long journey. Frankly, I was somewhat sceptical. It seemed to me that his good spirits were forced—an effort to convince himself that all was well; but there was nothing for it but accept the facts as they appeared on the surface. The Doctor, on the other hand, went about his preparations rather quieter than usual, and I was troubled with the reflection as to which of the two would break down first. I had not long to wait. On the morning of our departure the mules had been loaded and were already under way

when we saddled up. The Doctor led the way and I was preparing to follow when I heard a cry of alarm. Looking up I was just in time to see the poor old man tumble out of the saddle on to the rocky road. We rushed to his assistance and found him unconscious. He was carried back to the house, laid on a bench, and the usual efforts made to bring him round. When he did he was dazed and his speech thick and unintelligible and we thought he had taken a stroke of some kind. Happily this was not the case. All the same his condition was so serious that we sent to Cheque Cheque for a doctor—there was none in Andarahy.

While waiting this gentleman's arrival it was decided that his family should be advised and so we sent a messenger to Bandeira de Mello with a telegram to Bahia asking assistance. At the same time we made arrangements to send on all the mules we could spare with the heavy baggage and in this way reduce our expenditure as much as possible and conserve the pasture for the mules that were left.

All this took time and rumour was at the door before we were finished. The Mayor of the town came and wanted the Doctor taken to his house, and was profuse in his apologies for not calling earlier, and his only reason for not doing so was our being the guests of a man who was no friend of his. At the same time he could not allow personal feelings to oppose public duty. So long as he thought the Doctor was well there was no great necessity for his interference, but now he was ill the honour of the town was at stake. To allow such a distinguished son of Bahia to lie ill within the boundaries of their municipality without doing everything in their power to alleviate his distress was unthinkable, and in offering the hospitality of his house he was not only honouring the town but conferring an honour on himself. We responded to this long speech as best we could and pleaded for time—till we learned the doctor's verdict. In reality we wanted to consider what was the best thing to do. We were under many obligations to the man

who had been our friend from the first and a false step might land us in further difficulties. The Doctor, however, recovered in time to decide for himself and his decision was to remain where he was.

The Mayor's visit and explanation for holding aloof from us was the beginning of a general understanding of a delicate position. Our host and the official head of the town were members of the same family and the most powerful in the place. When they quarrelled the whole town was divided into factions, for although the people are fiercely independent in their own affairs, they are firmly attached to their political leaders. To them his word is law and without his authority they would not make a move. Consequently, while we lived in peace in the shadow of a big man's protection we were on the brink of a petty revolution and all were in a state of tension. Neither side were prepared to take risks and thus we were allowed to go on our own way unrecognised socially. Yet every movement was watched and reported, and, but for the Doctor's unfortunate illness, we would have resumed our interrupted journey without a suspicion of the true state of affairs—a state only too common in Brazil.

In an earlier chapter I mentioned the ruin which some such quarrel had produced on the promising village and railway junction of Quemadinha. In Goyaz I once slept in a room the door of which had a number of bullet holes from the same cause, and in another State I wanted the loan of a rifle from a friend as I was about to take a long and lonely journey. He was sorry he could not accommodate me. There was some trouble in the town and he might require all his firearms before my return. These, however, were mere storms in a tea-cup compared to the revolution in Matto Grosso a few years ago. Before leaving London I received a letter of introduction to the President of that State, but when the ship reached Bahia it was learned that a revolution had broken out and the President was killed. This proved to be true, and when I reached Corumba the new Government was in full power, but I was in time to see the triumphant return to

Corumba (his native place) of the political chief who had engineered the *coup d'état*. Bands played, banners waved everywhere, and rockets banged amidst universal rejoicing so that a stranger wondered why there had been any trouble when all were of the same mind. How any other Government could have existed was a puzzle, but mental acrobatic feats have always been associated with primitive States, and Matto Grosso cannot claim to be anything else, and this fact was enforced by the knowledge that the "great man" came from the capital in the same steamer as the wife and family of the deceased President, and the poor woman and her children were obliged to listen to the music, the rocket racket and the general rejoicing of the people of Corumba while she waited for a steamer to take her to Rio de Janeiro.

The medical man from Cheque Cheque gave us little satisfaction. He said the Doctor was run down—was weak and required a change and plenty of nourishing food. This may have been based on a complete diagnosis of the case, but it did not satisfy us, and consequently, we were glad to see our messenger after his long ride of about one hundred miles accompanied with a gentleman from the capital. It did not take long to put the latter in possession of all the facts, and after a conversation with the Doctor it was decided to make a covered stretcher, hire carriers, and move out at once, proceeding to the rail-head by easy stages.

We accompanied our friends to the drift on the Paraguassú and the parting between Benito and the old man was quite affecting. The men rested the stretcher while we chatted and Benito knelt alongside weeping bitterly. The Doctor caressed him on the head, speaking soothing words and giving him his blessing and impressing upon him the necessity of looking after me.

It is pleasing to be able to state that he reached Bahia all right, and although ill for a long time ultimately recovered his usual health but never again felt strong enough to venture into the interior which he loved so well in spite of the hardships he experienced when living there.

CHAPTER XI

BURNING DIAMONDS

IT was very fortunate for us that Mr. Girdwood had appeared on the scene at the critical moment in our affairs. He took over the Doctor's duties and piloted us through all our difficulties with tact and success, and I have nothing but the happiest recollections of our intimate association in more than one expedition. When he joined us it would be difficult to imagine a more acceptable companion. He was accustomed to roughing it, spoke the language like a native, knew the country we were travelling in, and was a *persona grata* everywhere, so that in resuming our journey with such a man to guide and advise us we marched out from Andarahy on our further adventures with renewed confidence.

By breakfast time we had climbed up the rocky road to the high lands by zig-zagging amongst great masses of conglomerate, passed a hermitage perched on a rocky pinnacle, and clattered through Cheque Cheque with every eye in the place turned upon us. The town was in every essential the same as its larger neighbours farther north, only it stood at a greater elevation and really appeared to have less space to expand in—that is, level enough to build a house. Of course there was the gently rounded red earth covered hills, and high open ground on the opposite side of the Piaba, but for some reason never explained no one seemed inclined to build on the favoured land. In this respect all the towns named (Lençoes, Andarahy, and now Cheque Cheque) reminded me of Burns' dictum about the witches in Tam o'Shanter

—"a running stream they daurna cross." We, however, were neither witches nor Cheque Chequians, and took advantage of the fine situation to camp and have our morning meal. It was really a wonderful sight. Away to west, north, and east, the scene was expansive and impressive—such as would have appealed to Rhodes with his dreamy imagination. His world's view in the Matoppos was no greater or characteristic than this panorama of the Diamond fields. Both are the architectural production of nature on a grand scale. The Matoppos, however, are favoured with abundant vegetation, whereas the Diamond fields are stern sterility, and while the former impresses one with a sense of overwhelming greatness the latter grips with a feeling of desolation and destruction—a world in decay.

When we resumed our journey we kept in a gentle depression for a time with the "Red Series" on the east, and the less promising grey sandstones on the west, but there was little to choose between them in the way of profitable production. Grazing was scanty and unsuitable, and in the best of circumstances would have given but poor sustenance to a few head of cattle per square mile. As we advanced things became worse, and the country was nothing but a rocky wilderness covered with stunted heath and scanty tufts of coarse grass. There was no depth of soil anywhere, and water entirely absent. It was the absence of the latter which prevented the district from being explored. It was said to contain diamonds, but nothing could be done without water to wash the gravel. No streams were available, nor could the rivers seen on the map be utilised without pumping machinery of a fairly powerful type, because the plateau was about the highest land in the neighbourhood—at least 500 feet above the drift on the Mocuge. Be this as it may, the road from Cheque Cheque to Sta. Isabel marks an area which has been severely left alone, and I take it, after allowing for all the difficulties named, that the wealth in diamonds is rather problematical. There would be no use, for example, going off the beaten track

and hauling up a tuft of coarse grass and expecting to find a diamond or two sticking to the roots. I have too much respect for the intelligence of the people to believe such tales, and they will give me credit with similar discretion when I dismiss all such stories as absurd. No hardship ever deterred a "garimpeiro" from tackling a difficulty, and nothing is sacred from his mining tools if he gets it into his head that there are diamonds there, and so far none of these hardy adventurers have been attracted to the bad lands discussed, and that is my guarantee for neglecting tales of fabulous wealth. The conglomerates undoubtedly underlie the grey sandstones, and in ages to come when denudation has laid bare the conglomerates and concentrated the destroyed material diamonds will be found in the streams of that day.

Up till this point our progress had been satisfactory, but as the sun passed the meridian Clarke began to complain of heat, and by the time we were in sight of Sta. Isabel, yet some three or four miles distant, he broke down. We rode alongside and helped to keep him in the saddle, hoping in this way to reach the town, but it was in vain. He could go no farther, and we were forced to stop and do the best we could for him. This was little enough. There was no water to relieve his thirst nor any shade to protect him from the sun unless by collecting stunted scrub and covering him cock-robin fashion. This we did, and also sent the mules on to the town with a note to the Mayor stating the case and requesting him to send out a hammock with sufficient men to carry our unfortunate friend, and at the same time hire a house for our accommodation.

Until a reply was received and the men came back with the hammock there was nothing to do but grin and bear it, and the three hours which elapsed before we saw the men coming seemed uncommonly long. The sun, too, apparently stood still and mocked our anxiety, and when it did go down the light went so rapidly that we stumbled into the town in cimmerian darkness which



GENERAL VIEW OF STA. ISABEL, WITH THE DIAMOND-BEARING HILLS
IN THE BACKGROUND.



added very much to Clarke's suffering. It caused the carriers to stagger on the uneven rock-strewn road and swear at the weight of the "gringo", (no term of endearment), and Clarke groaned again as some part of his body came in contact with the rocks. Yet the darkness covered our humiliating procession with a charitable obscurity which effectually baffled the curiosity of the people. We found that the Mayor had carried out our wishes with commendable promptitude and was in the hired house to receive us with an official welcome and a courteous offer of what additional assistance he could render. It was no mere lip service. He at once ordered Clarke to be stripped, and thoroughly examined him, explaining while he did so that although no doctor long, experience had enabled him to be of some service to his fellow townsmen in the case of illness. His report was reassuring. He could not discover any organic disease and it looked more like a case of constitutional failure to stand the heat and fatigue rather than anything else, and he had no doubt a few days' rest would put him right. This was encouraging, but it did not satisfy my friend. He was in the depths of despair and made me write his last wishes, and gave detailed instructions what to do should he die, both for the present and when I returned to England. It was a painful experience, and shook very considerably my faith in the good old Mayor's opinion.

This gentleman proving such a good Samaritan we were pleased to answer all his questions, and such is human weakness that we flattered ourselves that it was no common curiosity but an intelligent interest in our movements. As a matter of fact, the official head of the municipality of Sta. Isabel, although a broad-minded man and in advance of his constituents, was no exception to his neighbours when it came to prying into the business and private affairs of any traveller who happened to sojourn in the town. In our case we had nothing to hide and much to learn, while Clarke's illness causing delay made this fact more important. With the Mayor's

assistance we could fill up our time with the greatest advantage.

In the course of our conversation, or rather cross-examination, it came out that I was Scotch. "Scotch," exclaimed the old man, "why I have a Scotch lady teaching my grandchildren." This statement was so unexpected and seemed so incredible that both Girdwood and myself thought there must be some confusion of ideas. But subsequent questions only emphasised the fact, and to put it to the test he invited us to dine with him and meet the lady. The invitation was accepted with the greatest pleasure, and we were impatient for the dinner hour the following evening, and I imagine the lady was no less interested. At any rate, she made special preparations by putting on a sash or belt of Stewart tartan, and her youth and beauty were a delightful surprise. She could not be more than twenty-seven years of age, and yet she had the courage to banish herself in an isolated little known town, where she seldom saw an English speaking person, far less one of her own nationality. No mere teaching appointment could compensate for such a sacrifice, and it transpired during the evening that there was a religious purpose underlying the undertaking. She represented the American Presbyterian Missionary Society, and their foreign members were instructed not to raise antagonistic prejudices by an active crusade against the Church of Rome, but rather unostentatiously assist the people and impress upon them the desirability of a higher and a better mode of life. The enlightened Mayor had given the mission an excellent *pi   a terre* in admitting the young lady into his house, and she was rewarding him not only in giving his grandchildren a sound education but exercising a beneficial influence in the town. She astonished me by stating that she was the musical instructor for the town band. I asked her if she did not feel shaky alone in the midst of such rude uncultured men, but she laughed and replied that while they were uncultured they were never rude. They were nature's gentlemen and being anxious to

learn were making good progress and she hoped ultimately permanently to influence their lives for good. And if faith and enthusiasm with the magnetism of her sex could shake the people out of their dirt and superstition then it was an accomplished fact and she was rewarded for her self-denial, and the good old host made happy with the knowledge that he had played his part in making the reformation possible.

Altogether the night was a great success, and all the more pleasant because so unexpected. It effectually broke the ice, and made our continued intercourse with the Mayor of the most friendly kind. As a result of this he permitted us to witness the process of burning diamonds for which he had a local fame. I had heard the rumour that defective diamonds were treated by fire to remove superficial blemishes but was somewhat sceptical, and so was glad of the opportunity of seeing the process. To make this quite clear I will quote from a note I made at the time. "A small crucible was put on an ordinary blacksmith's forge. It would be about three inches high and half that width. When it reached a cherry red heat the old man put the diamonds in. To do this the crucible was removed and the diamonds—two oitavas (35 carats)—put in with an ordinary tablespoon, and the crucible again put on the fire. Charcoal was heaped up and the blast commenced and kept on until a welding heat was attained. This took three minutes. The crucible was removed and examined, and then replaced and the blast repeated for another minute and a half. This time varies, and calls for skill and experience to know the exact heat and time necessary. The final test, as far as I could make out, was that the diamonds could not be seen in the bottom of the crucible. Of course there is also skill required in selecting stones with uniform defects and such as will take an equal degree of heat without unnecessary waste. Immediately the crucible was removed a tablespoonful of potassium nitrate was thrown into it and the crucible shaken. By the time the smoke had subsided the crucible was held

over a basin with water and the diamonds scraped out and allowed to fall into the water. This did not injure the stones. They were then taken out and wiped on a piece of cotton cloth, counted, and replaced in their original covering. We were informed that the loss in weight is about 8.3 per cent., but the increase in value is 100 per cent. This makes burning very lucrative. At one time burned diamonds had a poor market, but now they are accepted without question. In fact, the old gentleman said he has had stones sent from Paris to be burned—that is, to undergo the process. It certainly makes a wonderful difference. Some of the stones we saw put into the crucible were very inferior looking but on coming out of the crucible the flaws were removed. This proves how superficial many of the defects really are and how small a reduction in weight is sufficient to remove them.”

There was something very appropriate in witnessing the process, which is peculiar to the district, at the very place where diamonds were first discovered in the State of Bahia. Close to the north end of the town there are a number of small more or less parallel streams not much more than a mile in length which flow, when there is any water in them, to the Mocuge, a tributary of the Paraguassú. It was in one of these that the momentous discovery was made by some nameless wanderer who was passing that way, and probably feeling thirsty explored the streams as the nearest likely place to find water to meet his necessity, and in doing so stumbled upon a pocket of diamonds. The news soon spread and there was a wild rush, with the three wee nameless burns as the centre of attraction, and the town of Santa Isabel de Paraguassú was founded. It is the best site for an urban population of any town I saw in the Diamond fields. It is perfectly level and somewhat triangular in shape with the apex lying to the west where the low hills rising out of the valley of the Paraguassú form a port—that is, a level opening through the hills to the west. The streets are wide, but the houses very much the same as elsewhere

on the fields. It, too, has its troglodytes. Their burrows, or caves, are in the face of an escarpment at the north end of the town. The soft sandstone underlying a harder bed has made the making of these dwellings easy work, and are quite dry and seemingly healthy, but I am afraid far from comfortable.

Sta. Isabel had also the distinction of being the highest situated of all the towns in the Diamond fields. My aneroid read 3,400 feet above sea level. An appreciable effect of this altitude was the cold during the night. Blankets were welcome and after our grilling in the valley below it was difficult to keep warm, and for the first hour or so after getting up we haunted the kitchen with a persistence that produced some mild sarcastic comments from old Ceripião. Another feature was the daily appearance of "neblina" (a damp mist which sometimes became a fine misty rain—a Scotch mist in fact). It began to develop during the early hours of the morning and by sunrise it was dense and penetrating with a resistance which enabled it to defy the sun for two or three hours, and sometimes it hung around until ten o'clock. It was disagreeable and certainly a defect in an otherwise perfect climate. It was, however, not exactly new to us. It often crept down the hills to the level of Lençoes and once in a while as low as Marco, and it was the same thing which awakened me and disturbed the pigs at Pedra Cravada.

Although such a long time had elapsed since the famous discovery was made the same place was still being worked for diamonds and carbons. No doubt some of this activity was induced by the high price obtained for carbons, and the fact that at the beginning they had practically no value and as a consequence neglected, and in many cases not recognised at all. Be this as it may, we found the hillocks of bare crumbling sandstone along the sources of the three wee nameless burns like so many ant heaps in active operation. There were men everywhere. Some were making water courses, others digging into the soft sandstone in the process of getting the cracks

wide enough for their purpose, washing canoes, and working with the batea. There seemed to be no system, and a good deal of wasted effort—no thought of the morrow—it could look after itself.

Far otherwise was the case at Mar de Hespanha, the name of a great pool on the Paraguassú some five miles distant from Sta. Isabel. There everything was calculated and planned with the greatest care. To work the pool was the conception of a Frenchman, and was being carried out with French capital, but after seeing the place I had "mi doots" as to the return on the capital outlay. The Mar de Hespanha was about 800 yards long and from sixty to eighty feet wide, with bare rocky banks. That on the east was high, but on the west it was a gradual rise to the higher lands around. No doubt the amount of denudation had been great and the concentration correspondingly high, but the current in times of flood was also exceptional, and quite capable of sweeping a considerable amount of the concentrates into the general flood to enrich the river lower down. The Frenchman, however, had faith in his enterprise and was busy blasting a channel in the rocks so as to expose the bottom of the pool. When this was done it was his intention to erect a longitudinal wall which would permit the usual flow of the river on one side while he worked on the other. The idea was excellent and the best possible under the circumstances, but before it could be accomplished, he had to blast his way up stream for some 400 feet, with an increasing face of rock till a maximum of thirty feet was reached, and as the rock was exceptionally hard I am afraid he had more than one season's work in front of him. Still, as stated, he was optimistic and was getting a few diamonds to encourage him to go on.

The Mayor's prognostications as to Clarke's recovery were verified. In four days' time he was on his feet, and as chirpy as a London sparrow and thus our farewell, with our friends of Sta. Isabel, were made under promising auspices, and we rode through the western port on to the great rolling plains in the best of spirits.



CHANNEL, BLASTED IN THE ROCKS TO LOWER THE WATER-LEVEL IN A
POOL, WHERE DIAMONDS MAY BE FOUND.



Even my old mule felt the change, and stepped out with an easier gait. Indeed, nothing living could have resisted the inspiring change. Behind us was a barren country, while before, and around us, a great undulating upland—like the South African veldt and like it creating a sense of health and freedom. The rains had produced a crop of grass that was a welcome relief to our eyes so long accustomed to look at the scabrous vegetation and bare rocks of an impossible district, but for the promise of wealth it contains in diamonds and carbons. Here, however, spread out before us with prodigal profusion was beauty of form and colour in numberless flowers of many varieties—living gems bowing to the gentle breeze.

Through this verdant plain the Paraguassusinho, as the Paraguassú at this part of its course is called, flows with a lazy disregard for its future movement to the sea. We crossed it by a "concession" bridge. This is a bridge built by private enterprise acting in concert with the authorities who guarantee a monopoly and permit the levying of toll dues at a fixed tariff to recoup the outlay and give a return on the capital invested. As these undertakings are only carried through at difficult or dangerous points on populous roads they generally pay well. Of course no one is forced to use them, but in our case, although the river was only some fifteen feet wide, it flowed between deep vertical banks and to avoid the bridge would have required a long detour out of all proportion to the expenditure to enjoy the convenience. If I remember aright, the tax was about a penny for each mule—pedestrians were free and wheeled traffic did not exist.

The scene changed before we reached our destination for the day. In the enjoyment of our *al fresco* lunch we neglected the flight of time, and with rain to delay us, it was dark when we reached Tanquinho a bedraggled little company. We were not expected nor wanted. Benito was snubbed when he asked for pasture for his mules, and told to put them in the "campo"—the open fields. This set Girdwood in action, and when he told

them that we were the friends of the "patrão" and were going to see him, they tumbled over each other in their obsequious service. The mules were promptly unloaded and put in an enclosed field and we were offered a house. This, however, was so dirty that we preferred to spend the night on the verandah where we had taken shelter. It was a miserable night. The roof of the verandah leaked and the wind coming from all directions with nasty gusts drove the fine misty rain in upon us, and as the aneroid read round 4,000 feet above sea level it was cold. I should mention, however, that I was beginning to doubt the accuracy of the instrument. Tanquinho was very likely the highest point we reached on the Diamond fields, but the figures given may be too high, and yet the relative heights may be accepted as approximately correct as the needle was very sensitive to change.

By morning (Good Friday) the rain had stopped and the wind died away, but the mist enveloped us with a dense white mantle that made it impossible to see objects more than ten yards away. When it lifted a little we found that the hamlet did not consist of more than a dozen scattered houses, and the inhabitants of each were desirous to do something for us. It seemed as if friendship had grown with their sleep, and I said so, but Girdwood replied that it was daylight and "Dooke" (the patron's by-name amongst the people) that was responsible for their hospitality. They saw from our equipment that we were travellers to be respected, and any complaint to their powerful landlord would have been answered by swift punishment. This may have been so, but it was none the less pleasant to have their goodwill and assistance. All we wanted, however, was a guide to take us to the "fazenda" of São João. This was readily procured and Girdwood and myself set out on our visit, while Clarke went direct with the mules. He was to await our arrival at Barrauna on the Rio de Contas.

As the guide strode on in front of us the sun broke through and rapidly dissolved the mist and enabled us to see that we were travelling on a high plateau with a

gorse-like scrub in clumps all round. In a little over an hour this changed and the guide stopped. Pointing to the west (a vague steaming space) he told us that we were near the edge of the plateau and that the "fazenda" lay in the valley below. All we had to do was to follow the path (a cattle track) and it would lead us to our destination. We soon realised that we were in for a rough ride, and would have to depend more on the cropper than the saddle girths to keep us on the mule's back. There seemed to be no bottom to that valley, and the rising mist made the illusion complete. The heavy rains of the previous day or two had made the path slippery, so that we lurched, and slid down slopes, and banks, splashing in the watercourse, and amongst the bracken where possible, to check our speed, and give our hearts a chance of resuming their normal position. At last we stood on the bank of the São João River, having descended 1,000 feet in an hour.

To our dismay the river was in flood and the ford looked nasty. We gave our mules a rest and hesitated to venture into the rushing torrent. Being so near the farm (less than half a mile) we argued that it was likely to be all right. Still we stood and debated the question until a man came galloping from the house and informed us that the patron had seen us coming and sent him to assure us that the drift was quite safe. Girdwood took the lead and got through all right, although his mule staggered and nearly went under at the worst place in the crossing. I was not so lucky. No sooner did I feel the water swirling round my legs than I realised that the cause of the mule staggering was the quantity of sand rolling along the bottom. My mule hesitated and that was fatal. The sand began to settle round its feet. I urged it on and it made a move but only gave a lurch because its feet were fast. This shook me in the saddle and in getting my balance I leaned too much on one stirrup which made the saddle to slip, already loose by coming down the mountain side, and nothing I could do prevented me from going under with the mule on top.

If the animal had been strong enough to have stood up against my weight when I gripped his mane and clung to his shoulders all would have been well, but as it was he went over with me. Luckily I was able to keep my head above water, and the mule soon kicked himself free, and left me to get out as best I could with my gear. This was easier said than done. I was silted in, and while it kept me from being washed away it made it difficult to escape, but I did, only to be laughed at for my efforts. No doubt I was a comical looking figure as I crawled on shore with my saddle. But worse was in store. I could not get off my riding boots, and was lying on my back with my feet in the air trying to get rid of the sand and water when the great man with a crowd of his dependants came upon the scene, and there was a general chorus of laughter at my expense. But what annoyed me was the consensus of opinion that you could not expect anything else from an Englishman. However, there was nothing to be made by protesting so I submitted to the ordeal with as good grace as I could command, and after a change of clothing and a glass of redistilled "cacacha" flavoured with orange bitters, I was none the worse for my immersion in the São João River.

The owner of the estate was no ordinary man. Apart from his power and influence as a great landowner he had a striking personality—a man not easily forgotten or set aside. All sorts of stories were in circulation as to his courage, and less commendable qualities, and it was with some curiosity that I made his acquaintance. His affable chaff on my ludicrous introduction put me at my ease, and I used my limited command of the language to the fullest in my attempts to draw him out. This was easy. He was free and quite open in the expression of his opinions, and living in such an environment these were neither mean nor common, although they were often fierce and uncultured.

He was about forty years of age, of middle height, strongly built, and tanned a healthy brown where his long glossy black beard allowed the sun to play upon his

face. His head, too, was adorned with a shaggy mass of hair which his old battered hat could neither contain or conceal, but his most striking features were his wonderful black eyes. They sparkled with a depth and intensity that was remarkable, responding to every emotion of the man with a suddenness that was sometimes uncanny. At one moment I had the feeling that they were looking through me, and the next they were dancing with mirth, or blazing with fury. This latter was produced when we began to speak about the law affecting the searching for, or working for diamonds. He excitedly declared that he would kill any man who worked on his estate without his permission, Government or no Government. The storm, however, passed as rapidly as it rose, and he was again the inquisitive country gentleman interested in me and all my doings without a hint of the burning fires within and the resolution of the man. This was brought to my notice in another way. I saw a large dog under a bench swathed in bandages. I asked what it meant and was told it was nothing. The fool could not keep out of danger and had got mauled by a jaguar—that was all. But the fact was that my host the day previously had tackled a full grown jaguar with only the dog to help him and succeeded in bagging his quarry, and thought so little of the deed that he did not consider it worth mentioning. Such was "Dooke," the friend and patron over an area as large as an English county.

By this time breakfast was ready, and we promptly responded to the call. During the whole of our chat a number of small brown children had been playing about in front of the stoop on which we sat without "Dooke" being the least annoyed by their noise or they frightened by his presence, but when he rose to go he shooed them as one would so many wandering fowls. The kiddies evidently understood and appreciated the humour of the action and laughingly scattered in all directions while he explained that they belonged to the people about the house—village would have been more correct.

The breakfast was the most wonderful thing of the kind I ever saw or took part in, and reminded me of the hospitality said to have been dispensed by our old Highland Chiefs in the height of their power and isolation. The room was large and without decoration or furniture unless for a long table of dark hard wood with a bench along each side. The table was none too clean, but that did not matter. It was in keeping with the surroundings, and was loaded with food. A number of men were hanging around when we entered, but no sooner did we take our seats than they got into position, and more continued to drop in until there were about fifty ready for action. Such a rugged lot it would be difficult to imagine. The only white men were the host, a friend, Girdwood and myself. The remainder ranged through every grade of colour to the grinning negro at the end of the table. Their dress was as tattered as their appearance varied, and there was a freedom quite astonishing. "Dooke" had to compete with the rest to make himself heard amidst the clatter of plates and the chatter of tongues. I occupied the place of honour at his right hand with Girdwood beside me. Opposite was the friend, and the scale of honour seemed to be graded along the whole line. The daughters of the house were the servants, and this was made an honourable distinction by their only serving their father, and having dependents to carry away the empty plates and replace them with others. Every dish was laid before him. He helped me, Girdwood, his friend, and himself, and passed the dish along, which kept moving until it was empty, and for a while those at the bottom got nothing. It was only when repletion had taken place at the top, or something that did not appeal to their taste that the lower order began to satisfy their generous appetite. But there was no lack of food. The cooking was a bit rough but was not noticed in such a company. I was tired long before my host stopped piling up my plate, and to keep pace with the never ending stream I merely tasted each course as it passed on its way down the table, and amused myself watching

it disappear in the distance. In this way about twenty courses were passed in review before our host suggested coffee and a smoke, leaving the lower order to finish at their leisure what was left of the good things provided by an unstinted hospitality. Perhaps it was a special meal it being Good Friday, but in any case it was an abundant one and good humour reigned supreme.

When we finished our coffee my clothes were dry, so getting into them and provided with a guide we left the "fazenda" with many expressions of mutual regard. The guide was a young negro giant. He was six feet two inches high and about sixteen stones in weight. His magnificent body was finished off with a figurehead as ugly as anything his race had ever produced, and no shark was provided with a finer set of teeth. But he proved very simple and good natured, while his size and strength came in useful before we parted. He got a sheep at the "fazenda" and this was unwilling to be led and caused some annoyance and delay by its obstinacy, but the giant, losing patience, abandoned persuasion and strode on with as little concern for its opposition as an ordinary mortal would for that of a rabbit.

The path was extremely rough and hilly. It was a continual sliding down slopes or climbing steep hills, but we were accustomed to riding and did not mind it so much as the slippery nature of the soil and the danger of the animals falling—that kept us anxious and alert. At last we heard the sound of water. It was our enemy the São João once more. This time it was narrower than higher up, and tumbling through ugly rapids. The drift was more or less level but not at all inviting. The guide examined it attentively and hesitated a few moments before he ventured to try his luck. He then made the passage with a stick to steady him. The sheep refused to follow and was dragged through more dead than alive. It was then our turn, and having had a lead got through without mishap and proceeded on our way. But it was not long until we again heard the sound of rushing water. The guide explained that it was the

Rio de Contas and we had to cross it—there was no escape. It was a much more formidable undertaking than the São João. It was a diagonal drift about fifty yards wide with the whole liberally strewn with boulders. From the broken waves of the water we could see where the actual drift was, but the velocity of the current made it very uncertain if any animal could keep this if we made the attempt. As it was, the guide decided that it was too dangerous, and suggested that we dismount, take off our clothes, and tie them on the saddles, and let the mules cross alone. This was done, and we watched their progress with intense anxiety. More than once we thought they were lost. As was anticipated, they were swept below the drift amongst the rocks, and as the water was too shallow to swim, and the current too swift to allow a direct course, they were driven from one point to another with the water occasionally flowing over their backs. Still they struggled on in the right direction, and at last reached the opposite side about a quarter of a mile below the drift. Luckily the bank was low and they were able to scramble out. Mule-like they gave themselves a shake, and began to eat as if nothing unusual had happened.

Their experience, however, made it quite certain that we could not pass that way. Not even the strongest swimmer had a chance in such a torrent of cross currents amongst rocks, and our guide had the sense not to risk it. We went up stream some distance to an islet. Immediately above this the bed was wider and where it divided into two channels we concluded was the best place for our purpose. The centre of each main current was deeper and stronger than elsewhere, but it was comparatively narrow and our guide thought he could jump the worst portions of these sections, and he did. Getting a hooked stick, and standing in the current as far as possible he extended the hook to Girdwood and when ready ordered him to jump. It was a great effort and landed him sprawling in the shallow water. Not liking the experience and the second section not looking so

bad Girdwood attempted it alone, but his soft feet prevented him stepping firmly and he was caught and carried away. Exactly what we thought would happen did happen. It was impossible to guide himself and he was knocked on the rocks and badly bruised, but he kept his head and escaped without serious injury. His fate did not encourage me. Still I had faith in my good-natured giant and obeyed his call when he extended his friendly crook. Moving slowly and planting my feet firmly I got as far as I could stand up against the current and fortunately could grip the crook. The guide did the rest. With a loud laugh he sent me flying through the air like a hooked fish and landed me in water that was no more than a cushion to my fall. The other section was negotiated in the same way, and we hurried to get into our clothes.

Shortly after this we parted with our guide at the village to João Correio. He would have liked us to have stopped the night among his people, and had the circumstances been different we would gladly have done so. We were both feeling the strain, and the village was so inviting that it was a temptation. What a difference from the Diamond fields. Here there were no diamonds and probably very little money, but there was rude plenty. The narrow valley was extremely fertile, and the people evidently industrious. I saw sugar-cane, cotton, maize, mandioca, pumpkins, melons, oranges, bananas, and a small patch of tobacco—a prodigality of good things that made one wonder at the hardships that man will undergo to get wealth.

Pushing on, we once more came to the Rio de Contas. But this time we were not taken by surprise. We had been warned and advised how to act. The only thing that worried us was the gathering darkness. This was bad, but it had its compensations in shading and toning down the worst features of the angry torrent, and I wished that the darkness had silenced the ominous noise of battling waves. Dismounting, we tightened the saddle girths, and took the ford together to encourage

the animals, and have something to look at instead of the nerve-shaking swirl of water. There was no attempt at fancy riding in trying to keep our legs dry. We both clasped our mules' ribs as tightly as we could and kept their heads to the current as much as possible. It was touch and go, and we were two grateful men as we climbed the bank and joined the road from Tanquinho. We had still nine miles to go and we were wet, tired, and hungry, with Girdwood bruised as well. There were, however, no more obstacles and shortly after eight o'clock we reached the camp. Clarke was in bed, tired but happy. He had stood the ordeal of descending from the plateau better than he thought possible. But he had to inform me that the mule that was carrying my baggage had slipped and rolled down the hill some distance, sending my boxes in different directions, but they were none the worse for the knocking about although no doubt my things would be a little bit mixed.

The next morning we reached Fazenda do Gado (meaning cattle ranch), a considerable village situated in a green valley on the left bank of the Rio de Contas. Here we joined the main road from Machado Portello. We had to unload our mules and ferry our goods across the river in dug-out canoes. This took a long time, but we reached the town of Rio de Contas in the evening. In the ordinary way I would have finished the chapter at this point, but seeing that I have been writing about crossing the river in the morning and reaching the town in the evening I have considered it advisable to give our day's itinerary to make the position quite clear.

After leaving the river we crossed a rough valley where the deep black soil in the vicinity of the river gave place to red earth and occasional outcrops of granite—the first intrusive rocks I had seen since leaving the railway. Situated on the black soil beside the road there was a small hamlet where the male inhabitants were blazing away at a realistic Judas, and were so anxious to get his head blown off that they scarcely gave us time to get out of the danger zone. In the red soil there were a few

scattered houses standing in cultivated patches which became less as we approached the hills, and finally disappeared and all was primeval scrub—just as it was when the first hardy adventurers pushed their way to the west by the very road we were on. Crossing the low range of hills we descended to another valley with the village of Casa Telha (tiled house) at the base beside a beautiful stream. Here we rested the mules and then pushed upward until we were 1,500 feet above the crossing at the river. It was a long and difficult climb and was made worse by neglect. In the old Portuguese days it had been paved and the water carefully conducted by prepared channels. All these had been allowed to go to ruin, and wash-outs were common, with ruts and ditches so that the added labour and strain were enormous, and we were forced to rest the animals again and again before we reached the top. It was the last great effort. The road kept the top of the hills and the cool breeze was very acceptable. Suddenly we came in sight of the town nestling away in the valley below and surrounded by hills. The picture was attractive and there was a sense of peace in the scene which was agreeable to the weary traveller.

The last few miles were down hill and through a schistose formation where the soil was thin and the grass scanty. Here and there miners had tested some outcrop for gold. The veins and stringers of quartz were hungry looking—that is, poorly mineralised, and I concluded that there was little continuity of any one definite reef and the values likely to be irregular—rich pockets of native gold, but so irregular and uncertain as to prohibit mining on a commercial basis. Yet of such a nature that denudation and concentration would in time provide a rich harvest, and it was just such a harvest which the original pioneers reaped when they first entered the valley of the Bromeda River and founded the town of Rio de Contas.

CHAPTER XII

FROM DIAMONDS TO GOLD

THE town of Rio de Contas was a disappointment. This was in a measure my own fault. I had passed every scrap of information I had collected, either by reading or oral tradition, through a literary microscope of Prescott's and Kingsley's construction, and consequently every incident and figure on the object glass was coloured until houses were palaces, and every street a boulevard. Brazil, however, had neither Incas nor Aztecs to leave massive ruins of past glory, and the gold was discovered and extracted in an age when little consideration was given to the place which produced it. It was Lisbon that was enriched and embellished—not Rio de Contas. And once the wealth was gone it was forgotten and left to languish and struggle on as a mere collection of houses somewhere in the vast spreading interior, and known in an indefinite way as the Sertão and the inhabitants as Sertenajos—a word that always appealed to me as suggesting some distant relationship with savages.

Thus it was our first sight of the town was the finest, and the distant view, like that of many a more famous place, the best. The white walls and red tiles in a smokeless atmosphere, in their setting of green, harmonised perfectly with the background of rugged hills, and encouraged us with expectations of a degree of comfort to which we had long been strangers. Surely the cattle grazing so peacefully in the valley below would supply us with milk, the shady fruit trees satisfy our desire for fruit, and the cultivated lands give us vege-

tables, while the town itself meet our other necessities. The very prospect of satisfaction made us realise how much we had been doing without in our diet and mode of living. It was a stimulus, and sent us into the town with confidence to present our introductions. These proved to be no empty forms. We were received with the greatest courtesy and every provision made for our comfort. The dinner was good and the beds excellent. What a sleep we had! We boasted about it for days after.

Notwithstanding the pleasure at the hospitality received there was no disguising the fact that the town failed to impress us as much as we expected. It did not possess a population of more than 4,000 inhabitants and the streets were unpaved, and only lighted at night with a few stray kerosene lamps which emphasised the darkness, and served to warn pedestrians of the danger of nocturnal perambulations unless on a moonlight night. In such a case there was no need for the kerosene lamps. The town was flooded with silvery light so bright that one could read, and felt like writing romantic nonsense all night long. In passing, I may state that it was between Rio de Contas and Machado Portello that I first had the pleasure of seeing the Great Bear and the Southern Cross above the horizon at the same time.

The houses for the most part were built of adobes, plastered, and white-washed. When kept in repair and clean they were quite attractive-looking without being rich. On the other hand, when neglected and dirty, with streaks where the rain had left its mark, or the plaster had fallen away the effect was disastrous, and this class of property was only too well represented. Many of the houses, too, had no windows—merely black holes in the walls as the ever open doors appeared at a short distance. The principal part of the town centred round a large square with a massive church at its upper side. Like everything else it was plastered and white-washed, and had no distinguishing features, and the neglected grass and weed-grown square, with paths through it to

convenient points, did not improve the appearance. It really suggested more of an old country churchyard than a public square.

The principal shops were located on one side of the square. There was no display of goods. They were merely stores where the people of the town bought such things as they did not grow or make themselves, and where, on market days, the country folk for many miles around made their purchases. But there was no competition and prices were high, and as a consequence many desirable things had to be done without, and quality sacrificed for quantity. It is true a little more industry would have improved matters, but there was very little encouragement for special effort. There was no market for anything they could make or produce, nor was transport available. I have hinted at the state of the roads. Wheeled traffic was impossible and mule transport was slow and costly. Once in a while an enterprising individual took a troop of mules to the Diamond fields with meat, cheese, and fruit, but the journey was so long and difficult that the return was out of all proportion to the time and labour, and, unless as a means of getting a little ready cash for some special purpose, offered no inducement to repeat the experiment. Thus it was that the majority took the gifts the gods sent and enjoyed life on a minimum of civilised requirements.

Now and again an ambitious youth forgot to return once he reached rail-head and had his eyes opened to the possibilities of the great world beyond. But the great majority were faithful to the place of their birth. To them there was no place like Rio de Contas. Both Benito and Ceripião belonged to the town and were never tired comparing other places to their disparagement. We have seen how Ceripião summed up Lençoes, and others less loquacious were no less convinced of the superiority of their "terra." Thus it was that the tradition of the town and surroundings were maintained without any influx of population from outside. As an example of this I may mention that the town was famous

for lace and silver-work—the last remnant of the special skilled labour of the first settlers. It is true that there are saddlers, bootmakers, tailors, tinsmiths, blacksmiths, carpenters, etc., but these trades are common to all, and even the lace-making has a wider distribution than Rio de Contas as the art originally came from Portugal, and all that the town can claim is a higher development than is found elsewhere in the State. When we come to silver work, however, we are dealing with a question which is peculiar to the town, and has been handed down from father to son from the beginning of things—from the original artists who were induced to settle in the town in the height of its prosperity. These were among the men who made the famous basins, water jugs, and other utensils of silver, and their descendants to-day, although not privileged to practice their art on such an elaborate scale, still make silver spurs, bridle mountings, buckles, stirrups, whip handles, knives with silver handles, and silver sheaths, and also in white metal for their less opulent customers. The work is artistic and well finished—an astonishing survival of the past.

We had another example of the ability and skill of the people on the evening of our arrival. It was the day after Good Friday, and, according to the time-honoured practice among Catholics, the effigy of Judas was being roughly handled in execration of the great betrayal of his Master. In the Sertão, where every man carries fire-arms, this usually takes the form of shooting till the figure is destroyed, and then burning the remainder as mentioned in the previous chapter. It was reserved for the town of Rio de Contas to improve on this idea. This was to suspend Judas to the base of a montgolfier balloon and by a system of time fuses blow off his limbs one by one after the globe was high in the air. As the explosives were mixed with fire-balls of various colours the spectacular effect was very fine, and the cheering of the people was good to hear. Bang! A leg was gone amidst a stream of falling stars. Bang! and another leg disappeared as the first. Meanwhile the balloon was

calmly sailing away to the west and had already cleared the town when there were a series of loud detonations which reverberated amongst the hills and involved the balloon in ruin, and the last fragments of Judas came tumbling to the earth in a flood of coruscating light. The conception was beautiful, and the way it was carried out a credit to all concerned. But the real merit of the display was in the fact that everything had been made in the town—balloon, explosives, and fire-balls.

Being one of the oldest towns in the interior, and so far removed from any other populous centre it had acquired an atmosphere which was peculiar to itself. The only other town at all like it was Paracatú, in the extreme west of Minas Geraes. Both were founded about the same time under similar circumstances and by the same class of settlers. Gold was found in large quantities in the vicinity, and the little colony prospered and grew till the alluvial deposits were exhausted. By this time the community was firmly established, and agricultural and pastoral occupations took the place of the more exciting pursuit of gold. It created a landed gentry, who retained many of the manners and customs of their fathers, and as in many cases these were drawn from the oldest families in Portugal they had much of the old world chivalry that was only possible because of their self-centred isolated position. And by having town houses they were able to keep up a social urbanity that appealed to the stranger as a new discovery. It must not be assumed, however, that it was fostered in ignorance. This would be a mistake. They were up-to-date, and to enable them to keep in touch with the rest of the world they had the telegraph and a postal service. But this suffered, like that on the Diamond fields, by being somewhat irregular and loosely organised. When I was in the district a paper was sent to me addressed to some one in British Guiana and had come from New Zealand. The only reason for sending it to me was because I was English. It was English and hence it must be for me. It was astonishing how far it had

gone astray, and as it was quite certain it would never reach its destination even if I had refused delivery, I took the liberty of reading New Zealand news about three months old. No doubt the addressee was some dredging expert from "down under" who was engaged in recovering gold from some of the famous rivers of British Guiana.

To counteract this defect in the postal arrangements, and be a social centre at the same time, some young men had organised a little club where they had a good collection of papers, and magazines, and where they met and played billiards, chess, and dominoes, as well as discussed passing events with a heartiness and freedom that was unknown in any other club I ever had the privilege of visiting. They were all more or less related so there was no reserve for fear of hidden rocks. They knew the opinions and limitations of each other to a nicety, whether it was wealth, education, literary, or musical accomplishments, or political aspirations. In any case, they received us with a hospitality that was gratifying, and one gentleman who had made a special study of the history of the town and district kindly entertained me with many an interesting narrative of the past.

It seems from his and other sources of information that gold was first discovered in the district over 200 years ago, and that on the 5th August, 1720, the municipality of Minas do Rio de Contas was founded by Royal decree. This was an important event, and gave the town authority over an immense tract of country, which has since been much reduced, but still the area under the jurisdiction of the "Cidade" (city) as it was officially made in 1875, is as large as an English county.

At its initiation it became the Government post for the collection of the gold tax and the regulation of the industry, and this is said to be the origin of the name Rio de Contas. In any case, it was the centre where all gold found in the municipality was registered, and where the Government essayed and took tribute of twenty per cent.,

or a fifth of all the gold found, stamped the bars returned to the owners, and guaranteed the purity, or standard of fineness. This was the final form which the metal took—the form in which it was allowed to leave the district, but long before it reached this stage it had passed through many hands as gold dust was current exchange among the people.

A striking example of this practice came into my possession as the result of clearing out the archives of an old church. It was a curse issued against one João Andre Correa who had promised so much gold dust to the church, but when it came to fulfilling his promise he refused payment, and the clerical authorities exercised their spiritual rights in denouncing and excommunicating him. A translation of the essential portions of the document is as follows: "To all persons ecclesiastics as well as secular who shall see hear or have other notice of this declaration health for ever in Jesus Christ our Lord in whom is all truth and salvation know that this oath treats of an admonitory action between the Rev. Father Luis A——— de Silva procurator of charity of the new church of Saint Antonio of this village and João Andre Correa defendant who has been given nine days allowed by law to pay the quantity of one ounce and a half of gold that he promised as charity to the new church of this village and within the stated time to confess without further hearing that he owes the debt. At the same court before me he was condemned in said quantity of one ounce and a half of gold and costs and because to the present he has not paid this declaration shall become operative which demands that the defendant pays the said quantity and costs within twenty-four hours failing which he shall be denounced by public excommunication and cursed with the curse of God the all powerful Father and blessed apostles Saint Peter and Saint Paul and all the Saints of the Court of Heaven and by this charged and named for aggravation and more aggravation censure and greater proceedings at the order of the Rev. Father or his chaplains who shall present read and publish at the time of



conventual mass and after this it shall be fixed to the church door from which it shall not be taken under the same penalties before nine days unless all has been paid. Given at these Mines of Paracatú above my signature and seal ——— the seventh of August one thousand seven hundred and forty nine years and I Manoel Gomes Bravo registrar and secretary to the proceedings the actual writer."

The amount of gold actually recovered cannot now be accurately given, but it must have been very great as measured by the economics of the time. The area over which gold was found in the Rio de Contas district was probably some 800 to 1,000 square miles and as it was nearly all alluvial it was only a question of slaves and time to overrun the place and collect the gold. In 1748 the gold remitted from Minas do Rio de Contas was 24,793.5 oitavas or 3,099 ounces. It is not quite clear whether this was the output of the district or only the Government tax. I think we may safely assume that it was the latter and, therefore, can multiply the figures given by five, and add a good margin for smuggling as the total productivity for the year in question. This, too, was continued for many years as is evident from the date I have given—about thirty years after the discovery. It is certain there was no delay or loss of time. It was not in human nature to remain idle or passive with such easily acquired wealth within reach, and the fact that it remained in such abundance after thirty years says volumes for the original accumulation, and the area over which it was found. And if we take the data furnished as an indication, without adhering to it rigidly as definite, and reduce it to figures we find in all likelihood some £2,000,000 to £3,000,000 worth of gold was extracted. This is a large amount and may seem high, but every fact seems to confirm such an assumption. Indeed, it is on record that the gold was in such abundance in some places that the slaves were whipped for laziness if they did not return each day one pound in weight of the yellow metal to their avaricious masters. Naturally such

a state of affairs could not continue long, but it had the immediate effect of forcing the slaves to concentrate their efforts on the recovery of the coarser and more easily obtained, and allowing the finer gold to take care of itself, and thus later workers who were satisfied with a lesser reward for their labour continued to find gold and keep up the quantity in circulation. This kind of thing was done again and again, and even to this day, especially after heavy rain storms, one can find an occasional individual washing for gold in some obscure stream. I have a ring made from gold found in this way. I came upon a boy about ten years of age washing the *débris* from an old mine, and seeing how dexterous he was, engaged him to wash for me, and in the end he obtained enough for an interesting souvenir of the district.

In the manner indicated the prospectors spread over the district, and with their slaves tested every river and stream and yet without leaving many permanent settlements as the result of their labour. This was due to the fact that the great majority of the men engaged in the work were slaves—the mere chattels of the white men, and when the immediate object of their presence in a place was accomplished they were moved on irrespective of their own inclination, and thus the country outside the town of Rio de Contas derived little benefit from the wealth it contained. Their advent and departure were mere incidents in the cycle of time which had carved out the topography of that rugged lonely land, and left the gold which tempted men to wander and be lost in its endless ravines and valleys.

Let us follow their example and return to the town. There were two things that the citizens were proud of—the church and the falls on the river a few miles below the town. I received several invitations to go and see these, but I was enjoying the sensation of being lazy for a few days and was not to be tempted. I merely poked fun at my would-be entertainer and asked why they did not utilise the power and beauty of the falls. If they were not prepared to spend money and generate electricity

to light the town they might do so to provide the power to run a cotton mill. This would avoid long and expensive transport, give work to the people, and be a most profitable business at the same time. They only shook their heads, and such remarks as they made proved conclusively that they were lazier than I was with this difference—mine was temporary, whereas theirs was the genuine article of long standing.

In the matter of the church it was different. There was no occasion to interfere with my self-imposed task, nor the recuperation of the mules, and, therefore, I gladly accepted the invitation. As we already know, it was a very commonplace structure, without beauty in its proportions, design, or material, and consequently I did not expect to find the interior either grand or impressive. Indeed, I soon found that it was none of these things which actuated my friends. It was really not the church at all which was the source of their satisfaction. It was my old acquaintance "muito rico" that was trotted out for my edification. The church had valuable gold and silver ornaments and utensils handed down from the good old times already discussed. Those of gold I found only weighed about five pounds, whereas the silver was over a hundred times that weight. Sixty to seventy ounces of gold, of course, can go a long way in making a show, and to people of limited experience, and that measured by the resources of less fortunate neighbours it was something to boast about. The silver, too, was of interest, not so much because of its intrinsic value, but, because, like myself, it was of foreign extraction, and must have been imported from some of the Spanish Colonies—Mexico probably, for it is a peculiar fact that while Brazil is so rich in precious and semi-precious stones and minerals generally, it has none which produces the white metal. I know that prospects exist in various parts of the Republic but nothing that ever was worked to any extent, or could be worked under present conditions with any chance of serious production or profit. Knowing all this I was the more interested in

the show which the simple-minded people proudly exhibited with the expectation of seeing my astonishment. Needless to state I was duly impressed, and certainly one does not see gold and silver cups, candle sticks, and other things associated with the elaborate ceremonial of the Roman church every day, especially in the remote parts of the Sertão.

The windows were few, so a dim religious light pervaded the church and gave an air of mystery to darkened corners, and toned down the crude figures and paintings which were hung on the walls. The roof, too, had its appropriate painting, and was perhaps the best, but this really did not reach any great degree of excellence, and was more than overshadowed by the gilding and glittering tinsel that was everywhere in evidence, especially about the altar. What was astonishing, however, was the number of figures (full size) of Jesus. One showed him kneeling, dressed in purple, a rope round his neck, and blood oozing from his feet and hands. There were Christs on crosses, bleeding from brow in which cruel thorns were sticking, bleeding from hands and feet, and a great gash in the side. It was horrible and made one shudder. It seemed that the object of the artist was to shock the spectator out of his complacency and certainly he succeeded, but with a revulsion of feeling against such a barbaric display. There were no signs of pity or love in all that gloomy building. They had forgotten, if ever they knew, the first elements of Christ's life and teaching: "Father forgive them, they know not what they do."

There was another church in course of construction and it has more architectural ambitions than the one mentioned, but when it will be finished no man knows. It was being built by a churchman with his own hands as funds came in, and they were evidently coming in slowly. It is an excellent principle to go upon, and is practised in both in Brazil, and the Argentine. Perhaps this is more a matter of necessity than virtue, but in any case it prevents the people running into debt, and it may stimulate Christian charity, for nothing is so expressive

as a church only partially finished, weather beaten, and showing green patches of sprouting fungus—the House of God neglected—forgotten.

Man and beast having recovered from the hardships of the Diamond fields, we decided to make a move. This was to a place some twenty miles west of the town. The word "cascalho" is familiar to us as the mining term used on the Diamond fields for gravel associated with the diamond. Here also it is a mining term, but in this case it is applied to auriferous gravel, and at Cascalho it had proved abundant and rich and so the place itself, now a small village, came to be known as Cascalho.

We crossed the river and traversed a beautiful valley which was irrigated by a stream which originated in the hills in front of us. For a time our path was along the right bank, and when passing the weir I was interested to see what an effective bit of engineering it was with the material at hand—an excellent example of the maxim: "Where there is a will there is a way." A number of trees were hauled up by the roots and their crowns dressed in the shape of an open fan. These were laid parallel with each other and the stream so that the branches faced the current and were interlaced. Across the trunks were placed a double line of logs. Between these stones and clay were puddled home and another row of trees put on top with the roots inside the previous row and the crowns overlapping and protecting those below. By repeating the process the tendency was to gradually work up stream, leaving the outer face of the dam a slope and by the time the requisite height was attained the flood water was effectually prevented from coming in contact with the base of the structure, while the inside face itself was protected by a talus of stone.

Shortly after this the road became very rough and the country rugged and broken. The hills were no longer those of erosion only but the product of a complicated system of movement in which the strata was thrown into characteristic forms and angles. The rocks were principally schists (slates) of a dark grey or bluish colour, and

at one place these projected through the grass-covered slopes in such a manner as to suggest the monumental stones of an immense graveyard, and as the slanting rays of the setting sun shone on them the effect was truly weird. And what gave a touch of realism to the scene was a cross erected over a cairn of stones immediately at the base of the hill and beside the path. It was not a grave but it commemorated the death of a man who had been taken ill at one of the out-lying villages. The tragic aspect of the case was the fact that the man knew what was the matter and with proper appliances the remedy was simple, but he had not got them and his friends were rushing him through to Rio de Contas when he expired at the place where the cross now stands.

The story was not a pleasant one, especially as the man was a foreigner, and all the more so because Clarke was again beginning to complain of pains in his legs and fatigue generally. This astonished us all, for while in the town he seemed remarkably well, but whatever the illness was, it developed very rapidly and just at sun-down he utterly collapsed and without any warning fell out of the saddle. The path was amongst rocks so that only one rider could pass at a time and the wonder was that he escaped with only slight bruises. These, however, were for the time being neglected. He was evidently suffering intensely and our whole efforts were directed to relieve him as much as possible, but it was little we could do, and this time there was no town at hand where we could get help, so there was nothing for it but for Girdwood to ride on to the village and try and get a hammock and a number of men to carry our friend to some place of shelter.

Meanwhile, my position was an unpleasant experience. Darkness descended with appalling rapidity, and here was I in a gloomy ravine amongst rocks and scrub with only the faint shadows of the patient mules outlined against the outer darkness and a groaning man for company, while the lugubrious gurgle of the unseen water of the stream as it tumbled and struggled amongst the rocks

was the only sound that broke the eerie stillness, unless for the spasmodic groans of the stricken man, and these in spite of myself recalled the cross and its tragic story. If he had only responded to my efforts to relieve him or answered my anxious inquiries it would not have been so bad, but he did nothing but groan, and by the time Girdwood returned I had worked myself into a state of desperation, and Girdwood shaking his head only confirmed my fears.

If the march into Sta. Isabel was bad this was very much worse. There, there was some sort of a road, but here it was a tortuous path amongst rocks, and bushes, up and down hills, in flood channels, alongside wash-outs, and over old mining dumps, and through their excavations. To enable the carriers to avoid all these difficulties and pitfalls they had brought a smoky stable lamp, and this bobbed on in front, digging holes in the blackness, and occasionally revealing the slow procession. Girdwood led the way and I brought up the rear, but as we advanced women and children continued to arrive till at last we had all the inhabitants of the village for an escort and I was forced to fall back to prevent an accident, and finally was deprived of any other guidance than the chattering noise of the excited crowd and the self-preserving instinct of my mule.

By the time I got inside the house Clarke was lying on the floor in a dead faint surrounded by a gaping crowd of rustics and Girdwood doing all he knew to shake him into consciousness. It was cruel to be kind, for no sooner did he open his eyes than the groaning which had been such a trial to my nerves began. But my companion had more knowledge and consequently was less worried. Indeed he was satisfied that the worst was over, and proceeded to clear the house and get a bed ready. When this was done Clarke had so far recovered that he was able to realise his predicament and his mind became active and tormented him into hysterics which were as painful to witness as the previous phase of his illness. However, by midnight we had the gratification of seeing

him fall into a troubled sleep, and when morning dawned he was free from pain but very weak.

The crisis was over and he rapidly recovered as on former occasions, but this time his legs remained swollen so that riding was out of the question for the time being and walking difficult. Hence he was forced to become housekeeper. One day when we returned from an excursion he excitedly informed us that he had discovered what was wrong with him. It seems that he had unexpectedly come upon an old medical book and when anxiously scanning it he had found that one of the symptoms of beri-beri is swollen legs with the distinguishing feature that when pressed the pit caused by the pressure remains—the same as in a corpse. This was news, and to prove that he was right he rolled up his trousers and made the experiment on his calf. He was right and we soon came to the conclusion that he must get out at all costs—another hint from the old book. The question, however, was how. This he settled himself by suggesting that if he could get a good, easy-going horse he was sure he could do the journey. Luckily, the horse was available by the courtesy of a lady in the vicinity, who, on hearing the news, promptly lent her own beautiful white riding horse. In due course we got a telegram advising us of his safe arrival.

The idea was that he should remain in Bahia until I arrived and we would go home together, but the doctor having confirmed our diagnosis, and found the disease so far advanced that only an immediate sea voyage offered any hope of saving the patient's life, Clarke was shipped to England and I was left to follow when I could. It is pleasant to state that by the time I did, Clarke was as vigorous and impulsive as ever, and quite prepared, had the occasion arisen, to repeat the experiment of visiting the Diamond fields of Bahia.

CHAPTER XIII

PIONEERS OF MODERN GOLD MINING

THE parting with my companion was a wrench, but being settled in Cascalho with a definite object in view there was less justification for indulging in sentimental regrets than on the occasion when the Doctor was forced to resign and return to the coast, and so as soon as I learned that Clarke had safely reached the city (Bahia) I turned my attention to the work on hand, and it proved to be very interesting. What had been stated as to the nature of the district and the extent of the work done by a previous generation was more than borne out by the facts.

Cascalho is situated in a small irregular valley surrounded by hills of a rugged and broken character with endless ravines and nascent streams, converging into the hydrographical system which covers the valley. It was this noisy network of mountain drainage which transported the products of denudation and concentrated it in the lowlands in the vicinity of the village, and made it famous in the local annals of alluvial gold deposits. And the dumps and excavations bear eloquent testimony to the thorough manner in which the whole valley had been worked and washed. Nature with its obliterating touch had done much to tone down the evidence of upheaval by a mantle of luxurious vegetation, and here and there an industrious individual had managed to level out a patch and bring it into cultivation, but the general effect was only to magnify the original operations and induce one to ask how the people managed to exist. It was clear there was no gold being produced, and the cultivated

area was out of all proportion to the requirements of the inhabitants. Yet I was told they were self-supporting—supplying all their own wants. What one did not grow or make another did and so by a system of exchange they managed to lead their simple lives in peace.

The answer to the enigma was the fact that the greater portion of their cultivated lands were scattered in depressions amongst the hills, and the various narrow valleys through which the more important streams flowed, and it was some time before I realised how varied were their resources. One day it was a patch of maize, mandioca, tobacco, or rice, and another a fair-sized area under sugar cane, with a sugar mill and distillery complete. The mill was small and primitive (made by a local carpenter and worked by two oxen) and produced unrefined sugar in brick-like masses, while the rum was a raw spirit indeed. A very little white sugar was made for ceremonial occasions, but the process was long and ruinous.

In the same unexpected way I came upon two women spinning cotton. They had a miniature waterwheel geared to their spinning frame, and they told me that they not only made the yarn, but they also dyed it and wove the cloth. A man whom I employed for some time informed me that his wife made all his clothes—that is, weaving as well as tailoring. His trousers consisted of a coarse cotton fabric with a red striped pattern of pleasing appearance. His jacket, however, was not so successful. It was dyed a dull black which gave it a shabby appearance, but he consoled himself with the reflection that it cost him nothing. He got the dye in the woods. The same applied to his straw hat. It had been made at home. Boots were a luxury and almost unknown—certainly seldom worn.

This is not an expensive outfit and gives an index of the modest apparel of the women, while with the children it was cheaper still. It was merely an overall of the simplest form. This detail was noticed by an amusing incident. There were a great number and variety of

butterflies to be had and wishing to make a collection I gave it out that I would pay one Tostão (one hundred reis) for each good specimen I received. The result was that all the children in the place, and even some grown-up people became busy, and one little chap about four years of age came one evening with his catch. It was rolled up in his dress and pressed against his breast oblivious of all below. When I looked to see what he had out jumped a lizard and scurried away amidst the merry laughter of the other youngsters. But my young naturalist was crestfallen at his loss, and his little dress was still raised higher as he pressed it into his eyes to keep back the gathering tears.

Although it was so warm during the day that clothing could be reduced to a minimum there was a peculiarity in that particular valley which made warm bed-clothes essential. This was a wind which rose every evening after sunset and increased in violence till midnight when it died away. What made it so striking was the fact that it was quite unknown elsewhere in the district, and the first night I naturally thought that a storm was approaching, but I soon learned that it came down as regularly as the land and sea breezes so common in hot regions in the vicinity of the sea, and without a cloud in the sky.

At first it would whisper under the tiles, then rudely shake the doors and shutters, and finally howl through the house, guttering the candles, and making the flames flutter and quiver till grotesque figures danced upon the walls, and with an icy breath forced us to seek our overcoats, while everything loose about the place banged and rattled to such an extent that speaking was an effort, and bed and the blankets were the only refuge from the unseen foe. In our case the house was large and rambling and quite unsuitable under the circumstances. Hence our inconvenience was greater than our neighbours.

The cause of the phenomenon was the fact that the valley was a perfect caldron (indeed, there was a place known by that name) where the water and moist soil

became heated during the day and which retained this heat highly in excess of that of the hills around, where radiation was more rapid. This created an unstable condition in the atmosphere with the result stated.

The wet season was drawing to a close and the weather on the whole was good, but the hills had the property of attracting every stray cloud which appeared on the horizon, and once they settled there they seemed to increase and develop into damp white mist of the type that is generally associated with the Scottish Highlands, and certainly the rapidity with which they rolled down the hills left no doubt as to the accuracy of the accusation. And when it merged into rain it exceeded anything ever seen in the old country. This was specially true when the effect was local and was produced by the breaking of a thunder cloud.

Some distance away there is a mountain of iron ore, and on one occasion it was my privilege to witness such an occurrence. The pen of Rider Haggard with its magic touch of weird realism never exceeded the terrifying grandeur of that scene. When first observed the black solid-looking cloud was rolling upon itself and gradually enveloping the mountain top, while the sunset rays played upon the outer fantastic, ever-changing fragments, penetrating into the gulfs and craters of the vaporous mass, and producing colours and tints which were wonderful, and bringing out the strongest contrasts. Meanwhile the thunder was growling and the lightning playing round the crest of the mountain. At first this was mild, and the spectacular effect the only sensation, but it was merely a preliminary trial, for soon the thunder increased in violence till the reverberations echoed among the hills with a deafening roar and crash that seemed to shake the ground upon which we stood, and the lightning was truly awful. It darted, it forked, it zig-zagged, and hurled balls of blue flame at that magnetic mass, and, making the cloud luminous, revealed the peak under a bombardment of heaven's artillery, more terrible than anything conceived by the mind of

man. No wonder the base was strewn with masses of broken ore. Nothing could resist such a hurricane of power. And although I was beyond the range of the storm and the great deluge that accompanied it I was within the orbit of its influence. It was impossible to witness such a scene without a feeling of tension and awe mixed with a sense of gratitude that although iron is a valuable mineral it is a blessing that it is localised when lightning charged clouds are about.

Under ordinary circumstances this variation in the climatic conditions would have been merely a matter for observing and recording, but in a country without roads, and where it was my business to penetrate to the uttermost recesses of every glen and gully it was a question of constant anxiety. The vegetation was dense and tangled to a degree that made walking at all times difficult, and when sodden underfoot and every branch a potential cascade it was heartbreaking. A rubber coat was useless after the first hour and generated heat that one was tempted to throw it open and take the consequences. The newer rain-resisting fabrics are better, and, provided they are loose fitting, fairly satisfactory—for a time. As a matter of fact nothing has so far been invented to be a complete protection under the circumstances discussed.

Another sort of annoyance which I could not guard against was the insect pests. I tried many expedients and remedies, but all were of no use. Gloves for the hands and nets for the head were an abomination, and the various smelling, sticky concoctions recommended only made things worse. There was nothing for it but grin and bear. Mosquitoes were everywhere, but during the day their activities were confined to the shady places, and the denser the overhanging vegetation the more voracious they were. Although irritating I was never afraid of them under these conditions. Rightly or wrongly, I came to the conclusion that the virus of malaria was not so deadly amongst them as the fraternity which lived in rooms and the vicinity of dwellings generally.

These were bred and lived where malaria was active, and so more to be feared. The malaria of the district, however, is considered to be of a mild type.

Another enemy was the "carrapato" (tick), large and small. These insects cling to the leaves and instinctively transfer to whatever brushes against them so that animals suffer very much in some localities. I have seen them hanging on an unfortunate dog like small grapes. To begin they are small, round and reddish-brown, but once they bury their hard horny heads in the skin they soon begin to swell and change colour. When they have once got a good grip it is not wise to haul them out as the head may break in the wound and fester. It is better to rub them with salt, tobacco juice, or a weak solution of ammonia.

The real plague, however, is not this species, bad as they are. It is the smaller ones which look like so much red pepper on the skin, and often cause great suffering and fever. I remember on one occasion returning to the camp covered with these microscopic pests and caused some amusement amongst my unsophisticated companions by stripping at once, holding my clothes over the fire, and rubbing my body with Scrubb's ammonia. They neglected the hint and within two weeks were laid low with fever, and the state of their bodies left no doubt as to the cause. They learned their lesson from practical experience.

But the most repulsive of all is the "berne." This pest is somewhat of an enigma to the casual observer. Some say it is a fly, and according to others it is a worm. This difference of opinion which I have heard discussed time and again arises from the persistence with which it attacks men's legs, and the arguments of the worm theorists are the difficulty of any fly, however active, being able to lay eggs in the legs when they are covered, and further protected by the grass and other vegetation, and the difficulty of identifying any particular fly as the aggressor. In this they have a show of reason, for few can say that they ever saw the fly, or felt its bite, and I

confess that I am in the same position. But all the same it is a fly which does the mischief, and there is no real mystery about the matter to scientific men. And when we consider that the object of the insect is not to bite or feed, but lay eggs, it is evident that to be successful its methods must be very different from the mosquito or sand fly. To be seen would mean warning the victim of what to expect and what precautions to take. To cause irritation at the time of piercing the skin would be sure to meet with resistance and in all probability kill the delicate organism. Hence nature acts in secret and it is only when the egg becomes a healthy grub that the victim realises its presence, and this is illusive in its early stages. The grub is furnished with several narrow bands of excessively fine needle-like hairs. These act as feeders and at the same time tear the flesh of the victim to make room for the growing maggot. At first it moves but seldom and the pain it causes is only momentary, but as it gets older it turns oftener and the tearing caused by the microscopic spikes produces a boil-like sore which deceives the uninitiated, but in less than two weeks the movements are almost continual and the pain correspondingly great, and no wonder. The grub by this time may be nearly an inch long and somewhat less than a quarter of that in diameter, and its nature fully disclosed.

From this it can well be understood how deadly it can be when present in large numbers, and some districts are so infested that cattle raising is impossible. In Baggagem, for example, I saw a calf done to death, and for days after I was haunted by the poor animal's large appealing eyes as it lay and watched us passing. On entering the village I was indignant to see a team of oxen all bleeding and vowed the man was a brute who could be so cruel as to goad animals in such an inhuman manner. But it was not the man. It was "bernes." The dogs, too, were repulsive for the same cause, and even men were suffering from them. Nor did I escape. I felt what I thought was a pimple on my back, and said

nothing, but as time passed it got worse, so I asked a friend to see what was the matter. It was a "berne," and had developed far enough for him to press it out. He then rubbed rum in the wound and I had no further trouble. The egg had been laid some days previously when I was bathing in the open.

On another occasion I saw a man with great open sores on his legs caused by the same enemy, and what made the incident stick in my memory was the fact that the victim accused me of witnessing his suffering without feeling when I could help him if I would. He knew I had mercury, and confusing the metal with the sublimate, nothing I could do would convince him of his error until he tried. My object in repeating this example is to emphasise the importance of carrying this preparation when travelling in some parts of Brazil. Kerosene sickens the grubbs, but does not kill, or cure. Pearson's Creolin is better, but the sublimate of mercury is the sovereign remedy as the old herbalists would say.

There are others on the list such as the "matuca," a fly as large as a small wasp, and of the same colour, only the shape of a blue-bottle fly. It carries a red-hot needle for its depredations, and neither man nor beast can suffer its attack with calmness or dignity. Those who have experience of the camel fly of the desert will understand what this means. Fortunately it is not numerous, and its bite or sting not poisonous. The "barrachuda" is present in greater numbers, and is quite careless of its life, and can be easily killed, but when left to do its worst it takes a piece of the flesh and goes to the nearest tree and eats it at its leisure. I have counted fifty black blisters on my hands at the same time caused by these silent clumsy flies, and I am afraid to suggest what my face must have been like, and strangely enough, although nearly as large as a house fly, one seldom feels them until it is too late.

The "Pium," too, must not be overlooked for while so very small that the meshes of an ordinary mosquito net are too large to keep them out, and our midges large

by comparison, the little ruffians are a torment which keeps one in occupation when they are upon the scene. Luckily, like his larger neighbours, he goes to rest shortly after sunset and one is left to wrestle with the mosquito and his nerve wracking hum.

To finish with this phase of tropical discomfort I shall only mention another experience. This was in Parana. Our camp was beautifully situated with an open green space in front, with the grass cropped short by grazing cattle, but behind was the straggling edge of a wood. We used to sit under the shade of these trees and smoke the pipe of peace. Suddenly there was a yell. We all jumped to our feet and rushed to the assistance of the yellor, but it proved to be only a beautiful hairy caterpillar, and the scene ended in laughter unless for the victim. In time we all came to have personal knowledge of what the innocent-looking grub could do, and as it happened there were several varieties we soon came to identify them by the roar of the one whose skin was in contact with the "beauty." That was the beginning of knowledge. I was exploring the bed of a stream with my trousers rolled up. When I came to a pool which was too deep I scrambled along the edge. On one occasion my bare leg came in contact with one of the largest species and I gave a jump and a roar. My companion thought that I had been stung by a snake, and for a moment I was uncertain what had happened, but the long red mark soon enlightened us. It became a blister an inch long and ended in being a bad sore, which has left its mark to this day.

Now I have exhausted my spleen and satisfied my conscience by giving some practical hints which may be useful to those who follow in my footsteps, I am free to confess that there were compensations. No one with eyes and imagination could travel in Brazil without being impressed with the wonder of it. Its endless rolling plains, its mountains and lakes, its mighty rivers and great waterfalls, its leagues of forest with tall trees and strange vegetation; the flowers, the birds, and the

butterflies—everything in fact, to please the eye and arouse the enthusiasm.

In an earlier paragraph I mentioned making it known that I wanted butterflies. The response was generous, but I had to assist, and notwithstanding the cheap wit of the comic papers at the perspiring frantic efforts of an elderly person attempting to catch the elusive insect, it is an amusing and interesting pastime. One soon finds that the above picture is merely a superficial aspect of the subject. When you have hundreds of varieties to catch, and embalm, it is a work of time, and if one puts their mind into the business it is astonishing how much there is to learn. One soon finds that skill, knowledge, and patience are necessary to be successful. The haunts and habits must be carefully noted, and this brings with it a detailed observation which soon makes the interest absorbing. Nothing has been acquired and developed by mere chance. For example, here is a grey specimen which is rather heavy and slow in its movements, hence it has the instinctive habit of clinging with outstretched wings to the bark of trees, and one soon discovers, to their astonishment, that it favours those with a rough grey bark and small patches of fungus of its own colour. The result is that it is quite impossible to distinguish it twelve feet away. How did it make the discovery?

Another variety protects itself by a trick. The shape of its wings have developed so that the tail assimilates the appearance of the head, and by some unknown law the insect knows this because it always rests with the head downwards, and appears according to the accepted order of things, and thus deceives its enemies. He snaps at what he takes to be the head, and the butterfly slips away with nothing worse than a damaged tail. More than once I made the same mistake before I caught the wily strategist.

Then there are those who love the sunlight rather than the shade, and these generally have gorgeous changing colours according to the angle of vision with reference to the source of light. They are wonderful things to see.

The first time I saw the "Emperor" I stopped my mule and watched it for about five minutes with delight. To see a specimen stuck on a pin in South Kensington Museum, or the wings embalmed in transparent enamel, is to look at a thing of beauty, but it is a poor substitute to the living, fluttering insect as it sports its glowing colours in the bright sunshine. On the Aquerý* river, a tributary of the Piquirý, which is itself an affluent of the Paraná, I was once camped in a clearing in the forest where this butterfly was well represented. On occasion as many as a dozen would be fluttering lazily around at the same time. It seemed a real mutual admiration society, and we the spectators. In any case they were comparatively tame and in striking contrast to the specimens nearer the haunts of men.

In this same district all the family were quite fearless. One would impudently alight on your nose and when you objected it merely transferred its attention to your hand, and, taking permission for granted, uncurl its trunk and begin to suck up the moisture—a perfect little

*This name, Aquerý, is not official, and the only map in which it will be found is one made by Standford to illustrate a travel article by me in *The Field*. In 1911-12 I was the Geological member of a survey party which crossed Brazil from Ponto Grosso to the Paraná River. In the course of our traverse we came to a fairly large river. Some thought it was the Piquirý, and others that it was too far north to be that river, and to put the matter to the test we decided to navigate it and settle the point once for all. It was a long and dangerous undertaking. We had to make a fleet of dug-out canoes, and then trust ourselves to what was really at that point a highland torrent over 3,000 feet above sea-level. It was full of dangerous rapids and many waterfalls, and to put it mildly our lot was not a happy one. To those who wish to get the details of such an adventure should read Mr. Roosevelt's book, *Through the Brazilian Wilderness*. The only difference between the two narratives is that we had no mutineers.

We finally found that our river was an unknown tributary of the Piquirý, and at the time we entered the latter our river carried the greater volume of water, although not so wide. From the first, arising out of our uncertainty, I called each camping place Query One, Query Two, and so on, and finally when I wrote the article mentioned above I named the river Aquerý, as it was a query, and at the same time harmonised with the Indian names of the region, such as the Tabagý River, Ivahý River, and Piquirý River. Finally, I may mention that I give the date of our adventurous journey to make it quite clear that it was a matter of history when Mr. Roosevelt performed his dangerous voyage of discovery.

glutton. Meantime dozens of its neighbours were hunting around on the same quest, and taking the greatest liberties with the most ruffianly looking amongst us. One had an old hat with the perspiration oozing from the base of the crown and forming a ring round his head immediately above the rim, and there I have seen half-a-dozen species clustering and fluttering—fighting for the best places—and forming a garland of living flowers which transformed that old battered hat into a thing of beauty.

This sense of joy is increased when the birds are included in the survey. Unfortunately Brazilians, as a whole, have not learned to appreciate the charm and usefulness of an abundant and fearless feathered throng. They kill them with a ruthlessness which causes even the smallest and prettiest to be scarce in the vicinity of town or village. But once one gets away from the beaten path it is a perfect paradise of, and for, birds. There is not a family unrepresented, and with richness and variety. Swimmers, waders, runners, scratchers, climbers, perchers, raptures—all are there. The audacious little humming bird flashes in the sun with a swiftness which dazzles the eye, and as he comes up to investigate one instinctively puts up the hand to protect the eyes, but he is off and hovering over a neighbouring bloom before the action is finished. The Brazilians call it by the poetical name of "kiss the flower" (*beija flor*), and that is what he does with a lightness and grace which transcends the bee's clumsy activity as much as the sunshine excels the moon's pale rays. He is indeed a creation of light and warmth, and amply repays for any protection that is given. One of my most pleasant memories of Matto Grosso is lunching in a great open verandah facing a garden rich with flowers and fruit trees, and watching the gorgeous little visitors flashing about in the sun and occasionally darting into the verandah and critically scrutinising our decorations.

Sometimes the stillness of the forest is broken by a persistent tapping which reminds one of a carpenter caulking a defective seam on a ship's deck. It is the

woodpecker at work. He is looking for his breakfast, and if we have any luck we may see him. Yes; there he is on yonder tree which is beginning to show signs of decay. How expert and business-like he is. See how he examines each bit of bark as he runs, and gives it a vigorous tap with his powerful beak, when he suspects it to be the home of some woodlouse or grub. Now he is satisfied and settled down to a hammering siege. It does not last long. He soon breaks through the hard but decaying bark and captures the destructive insects with a chuckle, and disappears to look for another tree in distress.

Another sound which is constantly attracting attention in some localities is the "cuddling coo of the chusie doo" (wood-pigeon). The characteristic notes are both familiar and deceptive, and the sportsman who wants to pluck the feathers of the admiring male who is responsible for the sound, will have to stalk very carefully and go farther than he anticipates. They are as difficult to locate as the corn-crake, and, being both quick and timid, the slightest noise stops the concert and causes the birds to retreat into the thickest cover available. Of course they come within the range of the shot-gun when found on the wing and are quite acceptable as an addition to the larder.

The young and enthusiastic hunter may think that he is successfully effacing himself when stalking his quarry, but, as a matter of fact, he is watched with interest and curiosity by a hundred unseen eyes. Not the least intelligent of these may be the grotesque-looking Tucan, which, perched on the topmost branches of the tallest tree, with the great nut-cracking apparatus stuck in the air like a new form of megaphone, and every movement of the body showing that although he may be silly-looking, and his anatomy specially made to carry his ridiculous beak and long tail, he is really a very clever bird, and fully alive to the necessity of protecting himself from the scheming huntsman below. This conclusion is more than confirmed when we have the pleasure of

seeing him domiciled as a pet in some rural home. There he is at his best, and in some respects excels the parrot without, of course, competing with him in chattering and making a noise. He is a silent individual and his charm lies in his quaint appearance and attractive habits. There is a wise comedy about his familiarity that is so pleasantly absurd that I always felt inclined to laugh when he insinuatingly came around in his endeavour to make friends.

In the open too—on the great rolling plains there are numerous birds, but here they are less subject to observation because of the difficulty of getting near enough. There is the Emu or Rhea which approaches the ostrich in size and appearance, only the feathers are of dirty drab colour and have little value.

Another inhabitant of these same regions is the Siriema which is oftener heard than seen, but it is a very useful bird. It lives on snakes, frogs, locusts, and such like pests, and is a close relation to the African Secretary Bird. The bird, however, which interested me most was the Gavião. This is a small hawk which haunts every fire of any size within the range of its eagle eye. When every other living thing is trying to escape from the devouring flames it is thoroughly enjoying itself. It flies amongst the smoke and approaches the flames without fear. It has learned the limitation of the fire and seems to delight in playing with it as it plunges here and there along the crackling line picking up a luxurious living at the expense of the terrified fugitives.

But the greatest exhibition of bird life in Brazil is perhaps, to be found on the lakes and rivers. It may not be more varied nor more numerous than those of the foregoing classes, but, its haunts being open and easily approached, it is seen to advantage. Time and again I have silently drifted down some river in the far interior in a dug-out canoe and admired the kingfisher with his gorgeous plumage engaged in fishing, and also watched the diver with his long snake-like neck performing feats of submersion that gave one the impression that he was

a true amphibian instead of a bird. This phase was further emphasised when he silently pushed his bill and long neck out of the water and imitated the action of a snake. Indeed, I have often mistaken the one for the other to the amusement of my keener-sighted companions.

This interest, however, was outclassed when a bend in the river would suddenly show a great low-lying muddy sandbank covered by birds of all kinds which love such places. There was the heron with his precious plumes, and the stork with one leg tucked under his feathers and looking like a small supercilious old gentleman with his hands under his coat-tails. There, too, was the flamingo making a splash of colour in the midst of white. All unconscious of my presence they pursued their various occupations of feeding, dressing their feathers, drying their wings, or no occupation at all—merely enjoying the sunlight and pretending to be wise like the stork. Humbug! an unexpected splash and all their solemn wisdom is swallowed in nameless fear, and hoarse screams of alarm as each seeks safety in flight with a great flapping of wings. The geese and ducks fly low and soon disappear, but the others form a confused scattered flock overhead. The wisest of all, however, are the small snipe-like waders who take to their heels and soon disappear in some reeds and wait there till the clamour ceases and they can return to their mud bank and drilling operations.

To show that this appreciation has not exceeded the facts I will conclude by giving Wallace's opinion on the birds of Brazil. He says: "Probably no country in the world contains a greater variety of birds than the Amazon valley. Though I did not collect them very assiduously I obtained upwards of five hundred species, a greater number than can be found all over Europe; and I have no hesitation in saying that anyone collecting industriously for five or six years might obtain near a thousand different kinds."

Sometimes the question is asked: What of the flowers? They are beautiful beyond anything we can show, but

with this important difference that there is seldom that massing of colour which is such a feature of our meadows, fields, and woods. For example, I have seen nothing to excel the buttercup yellow of our meadows, the bloom of the broom, the daisy-covered lea, or the blue of the wild hyacinth as it transforms some dell or shady bank into a thing of beauty which no words can exaggerate. The tropics have no time for such exhibitions. It is rank growth shooting into the moist, hot, sunlight, and hastening towards decay, encourages the following generation to do likewise. Here and there, however, a noble forest giant has shaken himself free from parasites, and standing forth in his strength blossoms into a mass of colour which is a pleasure to see. But sameness—monotony, is the outstanding feature of the whole. To find the beauty one must look for it, and to the diligent the reward is ample. He comes upon a group of orchids of exquisite aroma, colour and form, something which can only be seen at home at the houses of the rich specialist, or it may be lilies on some stagnant pool, or sluggish stream, or again, he may have the rare good fortune, as I had, to leave the Diamond fields when the great rolling plains are bursting into the full grandeur of new life, and showing a variety of flowers of which none but a trained botanist could convey anything like an adequate conception.

These remarks will in a general way give some idea of the floral richness of Brazil, but it must be remembered that the Republic is as large as the United States of North America, and extends from the north of the Equator through the torrid zone to the temperate regions of the south. In addition to this enormous extent of latitude there is a variation from sea level to mountain altitudes which make the highest hills of Great Britain but small elevations, and this, too, supports a range of vegetation which is quite exceptional. Take Paranaguá. There we have a beautiful inlet from the sea with a hot moist plain running to the base of the great inland plateau 3,000 feet high. Entering the train one passes through

palm trees, bananas, maiden-hair ferns, and orchids to take a few examples, but after going up for about an hour the scene changes, and the vegetation is entirely different. It is now pine and bracken which attract attention, and so on through each range of climate and altitude.

Yes; there are compensations in Brazil for the hardships the traveller is called upon to endure because of the undeveloped state of the country, and this I first realised in the wild and little known district to the West of Rio de Contas. The work was heavy and to be of value had to be thorough in the sense of penetrating every possible glen and defile, where original pioneers had left evidence of their search for gold. The result was very satisfactory, as proving that what Mr. Girdwood and I did was not a tithe of what had been done before us—lost and forgotten, and every fresh discovery added to our admiration for those hardy adventurers. Their work reminded me of the ancient workings of Rhodesia. The style was the same, and who knows but that some of them at least were done by the same race. We have undisputed evidence that the early Portuguese sailors, when they entered the Indian Ocean ventured up the Zambezi, and their missionaries penetrated inland, followed by the directors of pick and hoe. None, of course, who know the facts will ascribe the whole of the gold workings of Rhodesia to the Portuguese. These are too widespread for that, and there are signs that leave no mistake as to the periodical exploitation over an immensely greater era of time than that covered by the countrymen of the navigator.

CHAPTER XIV

ROLLING PLAINS AND GREAT FORESTS

IN the last chapter it was observed that the old Brazilian gold workings were similar to those of Rhodesia, and there is no doubt that nature in a tropical climate can so disguise the efforts of man that time, as measured in years, is a very uncertain argument to go upon. But for documentry evidence to the contrary the workings seen by me might have been a thousand years old. They were often buried in creepers and other vegetation, which left not a vestige of their presence, and torrential rains had battered the dumps into mounds that might have been anything. Torrents, too, had roared through the narrow gorges, carrying away all evidence unless to the trained eye expressly engaged in looking for it.

Relying then on documentry evidence we know that all the work was done between the year 1720 and about 1830. Since the latter date nothing of importance has been attempted or carried through, so every phase of work was performed by the same men, and any difference in method was dictated by the exigency of the case. They invariably began in the bed of a stream, and then followed the gold to its source, but whether this was done in intermittent stages or without a break is difficult to say, but I should imagine that it was reserved to the latest efforts to attack the rock and do for themselves what nature had done for the pioneers.

By the time they got this length they, no doubt, had learned a great deal about the country and the deposits they were called upon to exploit, and if their scientific

attainments were limited they utilised common sense to some purpose. They never by any chance attacked barren rock in the hope of finding gold at some point below. Their persistent aim and purpose was to follow up the gold and extract it wherever found with the least possible labour. In a word, they were prospectors of the very first order.

There were no stamp batteries or amalgamation in those days. California was unknown (from a gold point of view), and Australian alluvial gold had not been discovered. Consequently these Brazilian workers were the immediate forerunners of the modern miner with all his wonderful appliances and skill, and this must be remembered in passing judgment upon his achievements. Therefore, it goes without saying that we found few shafts or finely made galleries, but rather where there were underground workings they were mere burrows (I found the same characteristics in the Andes) that followed the richest streak of gold impregnated decomposed rock. The finest example of this was a place where they had removed thousands of tons of quartz and thrown it down hill out of their way while they continued to carefully preserve and wash all the soft decomposed seams and selvages that they found running through the mass until the site where their operations were conducted looked like a large quarry. At the bottom, too, where endless stringers and leaders of quartz radiated away from the main body, like so many cracks round a hole in a pane of glass, they had found something of value, and burrowed with a perseverance that held us with astonishment. Ventilation there was none, and the space was so limited that the individual who did the work must have wriggled like a worm while engaged in his dangerous occupation.

The most important of all, however, was at a place named Morro de Fogo. Here there was a village and a church, and as it was the only edifice of the kind for miles around I assumed that the village was of some consequence in the locality at the height of its prosperity, but that was years ago. At the time of my visit there were thirty habitable houses, but of these only seven were

permanently occupied, while tobacco grew in the street and castor oil plants on the floors of the roofless houses, and the church itself was only used on certain feast days, when all the inhabitants of the district flocked to the ceremony. As I passed it one morning the door was open, and two men were doing some repairs, so I took the opportunity of entering. It was the usual Sertanejo church, white-washed and open to the red tiles above, with a cheap gaudy altar. Just as I left, one of the workmen who had been speaking to me returned to his occupation, and narrowly escaped being bitten by a venomous snake. I have that snake's skin as a souvenir of Morro de Fogo and a tangible reminder of the fall of man—the emblem of sin and sorrow in the House of God if not in the Garden of Eden.

Morro de Fogo (the fire hill) is said to be one of the first places definitely located in the west of Rio de Contas, and the name was given to it because being the highest peak for miles around and the rocks of a red colour it was easily recognised, and in becoming a land mark received the name it bears.* The work was continued until a recent date. An old woman—probably the oldest woman I ever met—was brought to me by one of her great-grandchildren. She was coloured, shrivelled, and dried up to such a mummified degree that it was difficult to imagine that life, and intelligence, could continue to inhabit such a morsel of skin and bone. But they did, and in a thin, squeaky voice she informed me she was very old, and could remember the famine (an old gentleman of seventy who was with me never heard of it), but not the beginning of the gold workings, although she was reputed to be 110 to 115 years old. Her plea for asking assistance was she was too frail to work in the stream upon which the village was built. It had been her life-long occupation, and now she was depending upon her great-grandchildren to provide for her. I am afraid that for the last few years her labours were not very

* Another explanation is that a beacon fire was maintained on the summit to guide the explorers.

successful. I tried the experiment, but gave it up as a hopeless means of becoming rich. No doubt heavy rain storms helped things somewhat and made a few grains possible.

The interest of Morro de Fogo to-day, however, does not lie in the history of present possibilities of alluvial deposits, but in the extensive underground workings that exist almost as perfect as when done years ago, and testify to a degree of skill, and mining knowledge that is remarkable. Nor is that all. They are unique. In no part of the world have I seen anything quite like them, nor even in the literature of gold mining is there a record of a similar kind. In following the gold up stream they found its principal source to be in a hard bluish-black slate with regular pressure planes at right angles, or nearly at right angles, to the original lines of stratification, which had almost become obliterated by metamorphism. In these plains exposed on a bold escarpment running parallel with the stream they found thin seams of quartz. They have a gentle dip under the hill with great regularity, but no individual plane continues throughout the full range of the workings. Some are more persistent than others, and these are naturally the most extensively exploited, but in no case did I find the quartz more than an inch thick and sometimes it was merely a knife edge, and always extremely hard, and adhering to the country rock.

This then was the home of the gold as we found by experiment, but without actual proof I am under the impression that although the quartz carried gold to the extent of an ounce to the ton it was plates, or pockets, of native gold that the old miners were searching for. It is hard to conceive any other hypothesis. Think of it—an inch of quartz. It would take a very great amount of excavating to get a ton, and in such very hard country this must have been a very laborious operation. It was made easier by the use of explosives, it is true, but even then it was a big undertaking, and when the quartz was obtained there was no gold visible, and to crush it fine

enough to extract what it had, a difficult job. To get a sample of three pounds we destroyed the points of half-a-dozen gads, and taking all these facts into consideration, and the knowledge that it was always visible gold that guided those early pioneers I conclude, as stated above, that it was pockets of native gold they were working similar to, if less in value than, those found at a later date in the Jacutinga mines of the State of Minas Geraes.

I thought I had finished my work, but after we had everything packed and were preparing to return to our base at Cascalho with the idea of leaving for the coast as soon as possible someone came in with the report that there were some more important workings two leagues away, and they were reputed to be "muito rico." This was enough. We turned our animal's heads in the direction of the new "El Dorado," but after travelling the stipulated distance we were far from our objective, and four hours elapsed before we reached our destination to find that the place was a marshy valley with a short range of hills running parallel with it and a fine stream occupying the centre, but not a living soul within miles. The grass was high and game birds abundant but without dogs sport unsatisfactory. In any case we had no time for sport. Our provisions were limited and sleeping in the open had its disadvantages so we confined our attention to the work on hand. This was interesting, and, notwithstanding a good deal of grumbling at the time taken and other unexpected difficulties, I was glad we had gone. The workings were quite large, and their principal claim to distinction lay in the fact that they were probably one of the first examples of hydraulics applied to modern gold mining, and ground sluicing. In plan they looked like so many immense tadpoles lying parallel, with their heads to the mountain slope, and their tails to the stream. The miners discovered that the foot hills were really ancient talus deposits containing a certain amount of gold.

To wash this by their old method—that is, with a wooden dish (batea)—was laborious and slow, so they

utilised the full force of the mountain stream to break down and wash away the earth, opening out the head of their working to a good wide face and contracting the passage to a narrow channel at the exit so as to get the full value of the water in the final elimination and concentration. Similar openings were made over a distance of about half-a-mile, and thus they kept up a continuous process of recovery which was apparently as perfect as the most approved methods of the present day without having monitors or amalgamation.

There were no more "muito ricos" about, and we were allowed to return to Cascalho without interruption, or incident worth recording, unless I mention passing an extensive "salt lick," where cattle, and what antelopes there were, had made considerable excavations in their endeavour to get sufficient saline matter to satisfy their craving for salt, which is a scarce and expensive article of commerce, and cattle have to do with a minimum quantity. As a consequence the animals are always on the search for an equivalent to meet their wants. Hence any earth which contains the slightest salinity is eaten with avidity. Nor is that all. They will sometimes attack a camp in the face of much opposition, and eat the mules' harness, and many other articles. More than once I have spent a sleepless night defending my equipment from their pertinacious attacks.

On one occasion they appeared on the scene in the night, and did a good deal of mischief. Where they came from no one knew. When the sun went down there was not an animal to be seen within the range of the horizon, but by some means they found us, and had one not knocked against my camp bed in the act of stealing my riding boots there would have been a serious deficiency in our outfit in the morning. As it was, I must have presented a weird picture in the moonlight hunting a stolid ox determinedly chewing the leg of one of my boots.

On reaching Cascalho no time was lost in packing and taking the road for the city. And I was not the only

one hampered with curios and the products of the district. Old Ceripião, his rugged black face shining like a well-polished boot, was in the best of humour as he shouldered a small monkey, and carried a parrot in a wicker-work cage, while an old umbrella was tucked under one arm. His mule took it all in good part—never was in a hurry nor inclined to play fancy tricks, and the company on its back enjoyed themselves immensely. Every remark was a joke, and the old man's toothless mouth gaped again in loud, rippling laughter—a laugh so contagious that all joined in, and thus we left Cascalho in the best of spirits. This was induced by the fact that all felt free and irresponsible at having finished what was really a hard and trying experience, and it was only necessary to deliver Girdwood and myself safely at the railhead to enjoy a well-earned rest with their employers' benediction.

This being the case there was no time lost in the "Cidade" (city). We paid our accounts, wished our friends good-bye, and pushed on. The first evening we slept at a small village situated on the edge of the uplands to the east of Fazenda do Gado. Here one of our mules collapsed and had to be abandoned and another hired to take its place.

The second day we spent in crossing the great rolling plains which extend to Sincorá, where we camped for the night. There were remarkably few travellers or transport riders met during the day, nor were there many signs of game. In this respect it was in striking contrast to similar country in South Africa (the latitude and altitude are about the same as that of Southern Rhodesia). With so few people about and such a splendid expanse to roam in one would naturally expect game to abound. But it is a peculiar fact that in the whole South American continent the antelope family is not well represented. This has been noted before, but no explanation has been given for the phenomenon. Food is abundant and water plentiful in the latitude I was travelling in, and right through Southern Brazil, Paraguay, Uruguay, and

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the Argentine, and yet one might march for days and not see an animal of the family named. They are represented, it is true, but there is nothing comparable to the sable antelope, the koodoo, roan, water buck, veldebeest, or the great lumbering eland of South Africa.

Notwithstanding this, there is evidence that in the immediately preceding geological age there was abundance of large animal life on the continent. This has been demonstrated in excavations made into the great alluvial plains of the Argentine—material washed from the highlands of Brazil. Horses were unknown when white man first visited the Southern Hemisphere, and yet the bones of its predecessor are found in the deposits named. What brought about their extermination and that of equally large animals? A number of answers have been given but none are quite satisfactory. In any case it is a very remarkable fact that horses in the area mentioned, since their introduction, have done very well and bred rapidly. So much so that in some places even the poorest, without a pair of boots, has his horse, and a few years ago a decent horse could be had for thirty shillings or two pounds, and much the same applies to Brazil.

Sincorá is a name celebrated in the annals of the Bahia diamond industry. It is now about one hundred years since two travellers with geological knowledge, who had previously visited Diamantina, in the State of Minas Geraes, passed over the Serra between Jequy (sometimes spelt Jequey and Jequie) and Sincorá and remarked on the striking resemblance of the formation to the famous diamond centre in the neighbouring State. Their hint was neglected, and another generation had to pass before Sincorá became famous for its fabulously rich diamond deposits. That was some seventy years ago, and Sincorá has fallen from its proud position, and is now a place of no importance. Indeed, at the time of my visit decay and weeds were the principal objects to attract attention. We slept in the open ranch, and prepared our own food and bought some stale biscuits in the local store.

There was no inducement to delay our departure, and while the dew was still glittering like diamonds on the grass we began to climb the Serra, and early in the day descended into the valley of the Una, or Jequy as the river is called at this stage of its course. Just previous to reaching the village of Jequy our road joined that coming from Conquista, Caetete and Brejo Grande, and consequently travellers and transport riders were more numerous.

Here, too, I became aware of a curious bit of German enterprise. Caetete and the surrounding district is famous for crystals of the quartz family, and some Germans were in the habit of turning up periodically and buying large quantities of these at so much a kilogram—a mere pittance, and packing them in green hides which when dry bound the contents firmly together and kept them from being broken in transit.

The simple people were satisfied with the transaction—it was so much ready cash and the crystals were of no value to them. One man, however, with more knowledge than his neighbours began to make inquiries and found that while crystals of purity and fair size had a moderate price there was nothing in the business to pay for such expenses as the Germans incurred, and continuing his investigations he discovered the secret. It lay in the fact that occasionally beautiful cairngorms, tourmalines, topazes, and aquamarines, or beryls (when of a deep green colour were sold as emeralds and realised high prices) were found amongst the ordinary lens making rock, and the buying of the whole of some “caboclo’s” (unlettered native) stock of crystals was merely a blind to their real purpose, and the handsome profit made on the precious stones collected from the mass.

The individual referred to above went further. Having occasion to be in Germany he took a selection of the stones and had them cut and polished. These I saw, and was astonished at the brilliance and beauty of some of the specimens. He intended on returning to exploit

the business but whether he did so or not I never learned. It is worth considering by a man on the spot.

From the eastern side of the Sincorá range for the remainder of the journey the country was one immense forest, with open glades here and there. From being heavily timbered in the neighbourhood of Almas it becomes thin and scraggy, with a poorer soil towards Machado Portello. Indeed, for the last few miles it would be more accurately described as bush country. With this exception the forest extends in all directions for many miles, especially to the east and there is an almost exhaustless amount of valuable timber.

Unfortunately it has no immediate prospect of being utilised. It is too far inland and economical transport does not exist. Nor is there any hope of industries being established in the vicinity to use it on the spot. For this reason alone I am afraid that it will share the fate of many acres that have been destroyed in the process of clearing the land for such primitive agriculture as is practised in the district. This is to be deplored because much of it consists of the slow growing, highly valued, timber of the country such as Canella, Peroba, Batinga, Massaranduba, Cedro, Sapucaia, and Jacaranda.

It should be observed, however, that while there are numerous varieties of valuable timber for all purposes to which wood is applied, they are scattered all over the forest and seldom occur in groups. This being the case, particular species have to be searched for (the same applies to the mahogany and ebony timber trade of the West African Coast), and sometimes it is rather difficult to get a quantity within a reasonable area. Wallace mentions that he has known canoes on the Amazon and its tributaries to be "constructed of half-a-dozen different sorts of wood, and not always the same colours, or degrees of hardness," due to the difficulty mentioned. And I have experienced the same thing. On one occasion it was found necessary to make a fleet of canoes, and as they were to be used immediately only a few trees sufficiently light, easily worked, and large enough were

available for the purpose. Cedro was found to be the best and several square miles were searched before a dozen suitable trunks were found.

This peculiarity makes exploitation of such Brazilian forests different from the timber trade of Canada, or Newfoundland, or even the pine wood forests of the State of Paraná. There it is a case of go right in and help yourself, but in the forest lands under review every possible source of utilisation must be taken into consideration and provided for. Some trees will make telegraph poles, and fencing posts, others railway sleepers, piles for docks and harbour work, beams for bridges, and all sorts of rough construction, where strength and durability are essential under varying conditions of being wet and dry, while resisting borers, ants, and other pests. Some again are excellent from the architect's point of view, and meet every requirement of the building trade, and finally such as the Jacaranda, Peroba, Cedro, and Imbuia make beautiful furniture, and every kind of high class cabinet work.

In one of the glades of the forest we spent the third night. This was at the small village of Almas—a very prosperous place. There were not more than a dozen houses situated on one side of the road at the head of an open space, and having a reedy lagoon in the foreground with rich pastures all round, and a lengthy vista of green that was shut in by the endless forest in the distance. It was pleasant to see the cattle grazing on the margin of the lagoon, and the cows coming in to be milked at sunset. And the rich milk and the new made cheese were additional cause for satisfaction. More, too, I must put on record my thanks for an act of hospitality which would raise any nation in the estimation of travellers, and throws a flood of light on the sentiments of the people when it is in their power to carry out their generous impulses. This was a good dinner provided by the leading man in the hamlet and for which he would take no payment. Indeed, it was with difficulty that he was induced to accept the value of the cheese which we

bought. The village had a local fame for its cheese and I must say that it deserved its reputation.

Here again we have emphasised what I have already remarked as to the benefit of the perennial richness of the soil as compared with any accumulated wealth which is easily exhausted. What a difference between impoverished weed grown Sincorá of famous memory where, perhaps, anything up to £500,000 in diamonds had been found in the streams in the vicinity and the unknown village of plenty never heard of beyond the range of travellers who have enjoyed its hospitality.

Continuing our journey, the following morning we reached Machado Portello in the evening, passing *en route* the villages of Umburano, and Olhos de Agua. The former was the village where the Doctor got the mules and provisions when we commenced our expedition to the Diamond fields. It was a pleasant village, but it suffered some seasons for lack of water as there were no permanent streams in the vicinity. The other scattered hamlet calls for no comment, and, as already said, the nearer we got to rail-head the less attractive the country became.

We got a great reception. Girdwood was always well received, and I was treated as an old friend, and now being accustomed to the ways of the country I accepted the intrusive cordiality of all comers with an easy nonchalance which drew the remark that I was already one of themselves—a Brazileiro.

Our hot bath with the rum included was soon ready and we thoroughly enjoyed the experience after our dusty ride and fatigue, and then came the lean-to dining-room with the long narrow table which we already know. On taking my seat I was impressed with the identity of each dish and its contents. Even its location had not been altered by an inch, and had it not been for the presumptive evidence of heat and the absence of dust, I could have sworn I had only been out for a few minutes' stroll instead of six months and twenty-five days. Conservatism cannot go further than that. The most reactionary

individual under our system of Government is a rabid radical in comparison, and a blessing to the nation as a tonic against such deadly stagnation. Think of it. Not an inch of difference. Every steaming dish and platter with the same quantities, the same ingredients, and the plates and spoons not moved an inch. Perhaps they are there yet unless the weather-wear of the changing seasons, acting on the adobe walls, had forced the good-natured hostess to do her cooking elsewhere, or it may be a more stern call has recruited some other person to fill the dishes and keep the plates and spoons to the exact inch originally conceived to be the proper thing.

Awaken Bahia from your slumber and be doing. Let imagination exercise its true function in educating the people to an adequate conception of their position in the scheme of things. It is not enough to boast of the greatness of Brazil. Effort must be made to make it great. Enter then into the spirit of greatness and in friendly rivalry with the other States in the Union compete in the race of progress. Your past history demands it, and enormous resources in mineral and vegetable production lie within your grasp, and only wait for development and exploitation. Take up the work, carry the burden and reap the reward. Remember that Bahia has the honour of being the place in the new world south of the Equator where success was first achieved by a European. Be every man enthused by that example. Be every man another Caramurú and use his mother wit not to save his life, but invent new and better methods of doing things; his tact not to gain the friendship of war-like Indians, but to overcome business complications; and finally accept his dogged perseverance as a model to be consistently followed under all circumstances. Do this and the State of Bahia will be lifted into a new atmosphere, and prosperity reign throughout the length and breadth of the land.

THE END

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